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ABSTRACT

The significance of a planning-programing-budgeting system for educational use lies in its ability to improve educational planning and cost effectiveness. As part of the Western New York PPBS project, a model for implementing PPBS in districts of fewer than 25,000 students was developed and tested. The completed model consists of three components: planning, programing, and budgeting. This document reports on the four elements in the programing component: (1) program structure, the framework designed to achieve educational objectives; (2) program criteria, the measures of effectiveness of stated programs; (3) feedback mechanisms, the procedures to facilitate information return on costs and attainment of objectives; and (4) multiyear cost, the techniques to facilitate forecasting of future educational needs. (RA)

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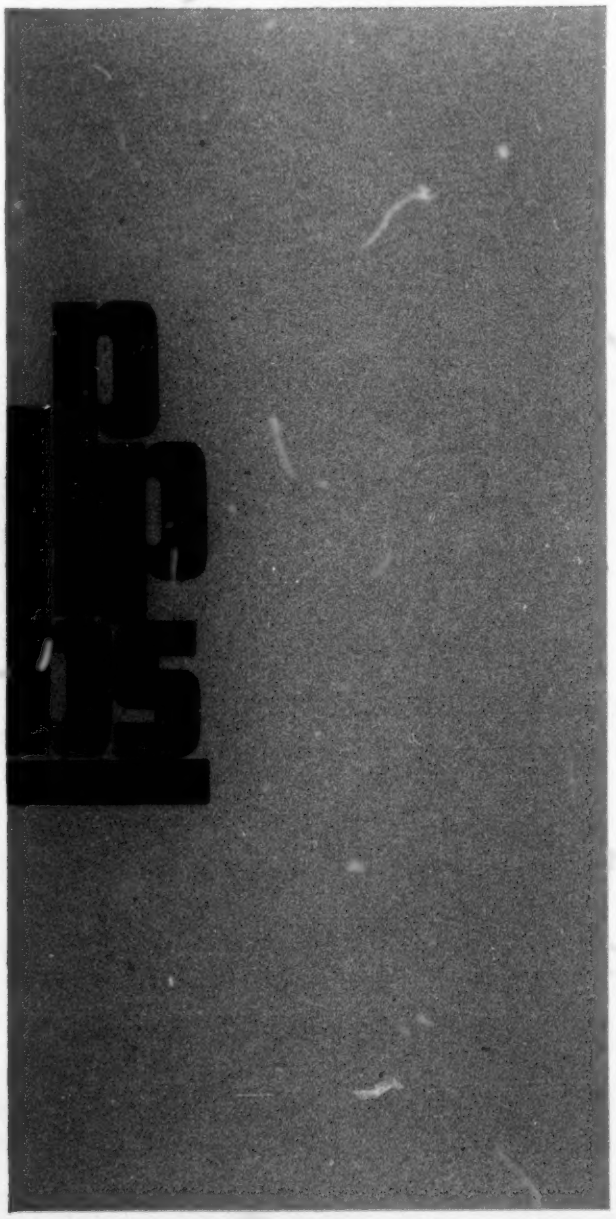

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DEPARTMENT OF EDUCATIONAL ADMINISTRATION
1969-1970

State University of New York at Buffalo

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

FACULTY OF EDUCATIONAL STUDIES

ED050461

April 23, 1970

Board of Education
Union Free District No. 2
Town of Cheektowaga
Cheektowaga, New York

Attention: Mr. John Murphy, Associate Director
PPBS PROJECT

Dear Mr. Murphy:

In accordance with the agreement between the Maryvale School District and the Department of Educational Administration, State University of New York at Buffalo, the development of selected elements for the Programming Component of the Western New York PPBS Project has been completed.

The purpose in designing these selected elements was to supply school districts having student enrollments of 25,000 or less with an illustrative district-wide program design which would facilitate the implementation of PPBS. The activities engaged in by the class provided its members with a valuable portion of their course experience in educational administration.

The Phase I study group is grateful to you and members of your staff for their excellent cooperation. It is equally thankful to the Phase I staff members who have provided guidance and leadership in this learning experience.

Very truly yours,

R. Oliver Gibson

R. Oliver Gibson, Chairman
Department of Educational
Administration

ROG/sl

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P P B S

DESIGN OF SELECTED PROGRAMMING ELEMENTS

The Report of a Project Made at the Request

of the Board of Education

Union Free District #2, Town of Cheektowaga

by

Educational Administration Phase I Class, 1969-70

State University of New York at Buffalo

Buffalo, New York

March, 1970

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ACKNOWLEDGEMENTS

The Phase I class of 1969-1970 is indebted to many people for their assistance in completing this project. The class would like to call special attention to Dr. Arthur Butler, Professor of Economics, SUNY at Buffalo; Dr. Frank Ambrosie, Research Specialist from the Western New York School Development Council; and Mr. Frank Calzi, Special Services and Curriculum Studies Director in the Maryvale Schools. The class would also like to express its appreciation to the coordinating committee for assuming the responsibility for the numerous details involved in preparing this manuscript for printing.

Finally, the class would like to thank the Phase I staff from the Department of Educational Administration for their assistance.

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CHAPTER I

NATURE AND DESIGN OF THE STUDY

Background

In the past, traditional line item and other types of budgets have provided minimal and fragmentary information for planning. The types of budgets used in most districts in the United States have achieved a certain degree of commonality and may be categorized as : (1) the object-oriented budget; (2) the function-object budget; and, (3) the planning-programming-budgeting system.(1) Most districts are now operating on function-object budgets. This type tries to identify operating costs by dividing the total educational operation into specific object categories, then sub-divides these into their respective components as determined by function and object, thus arriving at a series of sub-totals (sub-expenses). This type has evolved more as a means to control ever-expanding areas of management on a non-integrative, short-range cost accounting basis. In contrast to the PPBS type, this type is more concerned with inputs rather than outputs, and projects needs and costs on a year-to-year basis only.

The traditional line-item budget has remained limited in its usefulness for fiscal accounting and defining broad operational programs. A budget more useful for specific programs and sub-programs designed to meet operationally-achievable objectives is the program budget. The program budget breaks the traditional bond among long-existing designated categories by redistribution of elements within them

according to the programs containing them. This can provide the average person concerned with educational costs the ability to see just where funds are being allocated and spent. This does not necessarily imply that a reduction in operating cost will result. To believe so is to consider PPBS a panacea, which it isn't. Rather, it means that it is possible to forecast operating costs and needs with greater accuracy, flexibility and accountability. Visualized programs can expand or be discontinued as the need arises, as determined by managers in control at each level in the system.

Beginning with the federal government's decision to implement PPBS via RAND Corporation's assistance, the program budget aspect of PPBS has attracted the attention of educators as well. It is, however, only since the early 1960's that operational program budgets have existed, a relatively short time in which to expect a massive change-over to take place in education. While it may be true that there are plans such as the 5-5-5 Plan to introduce PPBS into governmental activities, only certain modified portions of the total Planning Programming Budgeting approach have been operationalized. According to Hartley, some of the schools using a modified approach include the following: the Baltimore City Public Schools; the Chicago Public Schools; the Dade County, Florida, Public Schools; the Memphis City Schools; the Philadelphia Public Schools; the Sacramento City Unified School District; the Seattle Public Schools; and the schools in the Westchester, New York, intermediate school district.(2)

The increasing complexity, variety, and amount of educational costs reflect the need for better financial planning in schools. Any budget is merely an estimate of planned expenses for a given period. The traditional budget is constructed so that its legal power and control exists only from the beginning of one fiscal year to its ending. However, since most schools do not begin and cease operation on these dates, there is a time of overlap and confusion. A projected program budget aims to avoid this through multi-year financial planning.

Until now there has been little emphasis on determining the total cost of individual programs in relation to the system as a whole. This has resulted in a yearly determination of separate itemized expenses on a limited year-to-year basis, rather than on a longer (e.g., five year) plan as typically used in PPBS. Frequently, much-needed programs have been eliminated and new ones prevented from emerging due to a shifting in allocation of funds. Had multi-year cost projection techniques been used, it is possible that these shortcomings could have been avoided. Phasing-out and phasing-in of programs should have been viewed in terms of both immediate and long-range benefits, thus allowing for more innovative approaches in the total educational system, something which traditional budgets have ignored. Smaller school systems, with the impetus of ESEA grants, are beginning to realize this and are attempting to implement a change toward PPBS.

One difficulty for schools incorporating a PPB system is the lack of familiarity of personnel with PPBS. Thus, one of the main facets to be considered by a district proposing to move into the area of PPBS is that of having an informed professional staff and an informed public

It is obvious that effective public relations will be needed to accomplish this.

Any district considering the PPBS approach to budgeting should realize that it will take some time and effort before a change is complete. Objectives and programs unique to its own needs will have to be developed. The traditional budget, in the meantime, will and should continue to exist, with modifications incorporated as determined. If this is done, an eventual PPB system can then provide for financial planning in harmony within the total educational operation.

W.N.Y. PPBS Project

On November 21, 1967, the Regional Advisory Council of Project Innovation, the Regional Supplementary Education Center for Western New York, officially recognized the need for the development and testing of an operational illustrative model for applying Planning, Programming, Budgeting Systems (PPBS) in those public school districts of Western New York having a student enrollment of 25,000 pupils or less. The development of the illustrative model has been undertaken as the W.N.Y. PPBS Project. The completed model consists of three components; a planning component, a programming component, and a budgeting component.

Encouragement for this project has come from the Western New York Chapter of the Association of School Business Officials of the Erie County Board of Cooperative Educational Services. Additional support has been expressed by Dr. Austin D. Swanson, educational finance specialist of the Faculty of Educational Studies at the State University of New York at Buffalo, and from Dr. Samuel Bennett, District Superintendent of the Maryvale Central School District of Cheektowaga, New York. (3)

Significance

The significance of the effort to develop a PPBS model lies in the fact that it offers a promise of "...improved educational planning, and attainment of objectives in a manner that affords the most educational benefits at the least cost." (4) The PPBS techniques which have proven successful in other areas may prove to be a major turning point in the improvement of educational management. Through PPBS the public may be made aware of how effectively their monies are being spent toward school system goals. PPBS should prove responsive to the changing needs of the community, thus avoiding a static condition in community education.

If the promise of PPBS is fulfilled, its successful operation should result in the following benefits:

1. Boards of Education will have improved bases for policy-making, and the public will be better informed about program plans and accomplishments.
2. Operating efficiency will be increased through intelligent budget planning over a multi-year span.
3. Administrators will gain a better understanding of how to allocate resources and plan programs within their budget.
4. District and intra-school statements of objectives will be improved.
5. Departments and activities of school districts may be unified by focusing and directing attention of personnel involved to specific school objectives.
6. Program performance as well as priorities can be more systematically evaluated.
7. Instruction may be improved as a result of focus on overall objectives and analyses of alternative procedures.
8. Effective planning and follow-through of new programs can be insured.

9. Data will be presented in a more useful format.

10. The community will be able to focus its attention on total school programs, and on the outputs these programs produce.

11. Taxpayers' confidence may be enhanced by cost analysis in terms of program outputs.

The anticipated benefits of PPBS should provide significant educational gains for the Pilot School District and similar school districts. If successful, the Western New York experiment may set a workable pattern for the development of similar procedures in other school districts of fewer than 25,000 students. It is anticipated that the significance of the project may be nationwide.

Task of the Study Group

The Phase I class (a group of 24 experienced educators hereafter referred to as the study group) assisted in the development of the programming component for the Western New York PPBS Project. The funds for this project's research and development activities were made available under an ESEA Title III grant to the Maryvale School District, Erie County, New York, in affiliation with the Western New York School Development Council.

The programming component is vital as it provides the structure necessary to operationalize the overall objectives of school systems using the PPBS Model. It also provides a district-wide program design.

Specifically, the study group had the responsibility of devising the following four selected elements of the Programming component:

1. Program Structure -- The operational framework designed to achieve the explicit objectives of a school system.

2. Program Criteria -- The measures of effectiveness of stated programs. Largely, such measures will be quantitative and should permit a determination of program effectiveness over a specified time period.

3. Feedback Mechanisms-- Procedures designed to facilitate the return of information related to cost and to the attainment of the objectives of operational programs as a means to control present operations and decision-making in future planning.

4. Multi-year Cost -- Techniques to facilitate forecasting of the human and physical resources needed to attain program objectives over a one to five-year period.

Procedures

The procedures utilized by the study group in its task of developing and reporting on the four selected elements were as follows:

Responsible Party

A. Maryvale Liaison
   1. Obtained information from the laboratory district as required by project committees, such as curriculum guides, budget and plant information, etc.

B. Client Liaison
   1. Obtained information from the Western New York School Development Council as required by project committees, such as data from other PPBS studies.

C. Program Committee
   1. Reviewed literature on existing PPBS programs.
   2. Studied existing curricular and organizational structure of the laboratory school district.
   3. Studied the objectives provided by the laboratory school district.
   4. Designed a program structure to carry out explicit objectives that accomodate the typical major functions and activities of a school district.
   5. Devised measures of effectiveness of the program. Largely, such

	measures were to be quantitative and were to permit a determination of program effectiveness over a specified time period.
D. Feedback Committee	1. Reviewed the literature on decision-making. 2. Reviewed the literature on evaluation. 3. Reviewed the literature on cost reporting techniques. 4. Developed procedures for measuring and reporting the effectiveness of programs in terms of their stated objectives. 5. Developed and specified procedures for a yearly pre-budget financial-curricular review by administrators and the Board of Education of actual program costs and effectiveness for the one-year period ending with the close of the latest accounting period.
E. Cost Forecast Committee	1. Studied methods of forecasting used by existing PPB Systems. 2. Reviewed the literature on forecasting techniques that indicate the human and financial resources needed to attain program outputs over a five-year period.
F. Co-ordinating Committee	1. Determined a timetable for project activities. 2. Met periodically to discuss the developing elements of the study. 3. Made recommendations to the entire Phase I study group concerning project progress and direction. 4. Met periodically with staff to discuss project problems.
G. Editing Committee	1. Edited drafts presented by study group. 2. Had copies of final draft printed for distribution to client.

Nature of the Report

The report contained in the following chapters consists of illustrative program criteria, feedback mechanisms, cost forecasting techniques, and an illustrative program structure.

In Chapter II, program structures from other PPBS projects are presented along with that developed by the study group. Also present are illustrative criteria and techniques found useful in their development.

Chapter III deals with feedback mechanisms. It shows the interrelationships among feedback and the remainder of an educational system. In addition, illustrative procedures and forms are presented which may facilitate communication of information regarding instructional program costs and success.

Chapter IV consists of illustrative procedures and forms designed to enable school districts to predict program needs and expenses five years in advance.

In Chapter V the study group draws conclusions and makes recommendations for future study concerning PPBS.

Footnotes, Chapter I

1. Harry J. Hartley, Educational Planning-Programming-Budgeting: A Systems Approach (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968), p. 12.

2. Ibid., pp. 115-124.

3. Maryvale Central School District, Development and Field Test of an Operational Model for the Application of a Planning-Programming-Budgeting System to Local School Districts A proposal submitted to the New York State Education Department Center on Innovations in Education. p. 3.

4. Ibid., p. III.

CHAPTER II

ILLUSTRATIVE PROGRAM STRUCTURE AND CRITERIA

Chapter II has been prepared in two major segments. The first segment addresses itself to the evolution of the illustrative program structure herein contained. This portion is paramount, since it logically groups activities to better facilitate the attainment of objectives.

The second segment describes a suggested procedure for the development of program criteria. In addition, illustrative program criteria are vital since they enable a school system to determine the extent to which its desired objectives are being realized.

Illustrative Program Structure

Background for Program Structure

The organizational structure of a school system has a profound influence upon the decision-making process as it applies to planning, programming and budgeting. The nature of the organizational structure has, in fact, a direct relationship to the decision-making process since it specifies the point at which decisions are made.

The major thrust of a program structure is to strengthen sound decision-making by offering a structure which not only enhances planning, evaluating and budgeting, but also facilitates the process for selecting alternatives in decision-making. This may be accomplished by grouping interrelated activities into logical categories. These groups of activities are characterized in the language of PPBS as programs.

Hartley defines a program as a "...group of interdependent, closely related services, or activities possessing, or contributing to a common objective, or set of allied objectives..."(1)

Programs of activities having generally similar objectives may be grouped together as categories for the purpose of classification. This organization, based upon the objectives which school activities are designed to achieve, is called a program structure. One task of the study group has been to develop an illustrative program structure for a school district of 25,000 pupils or less.

In pursuing the development of a program structure, the study group set forth various limitations in design. These limitations were:

1. The illustrative program structure must be possible to implement in a target district within reasonable budgetary limits.
2. The implementation of the illustrative program structure should not require the employment of additional staff.
3. The purchase of electronic data processing hardware should not be a requirement for the implementation of the illustrative program structure.

With the above limitations in mind, the study group examined a variety of PPBS models for the purpose of identifying aspects of program structure which might be applicable to the task at hand. It was the experience of the study group, however, that the review of selected PPBS models proved most useful in developing a frame of reference concerning the nature and characteristics of program structure.

The study group proceeded to classify all possible activities of a hypothetical school system of under 25,000 students into logical categories of interrelated activities. The models reviewed tested the validity and rationality of the study group's emerging program structure. The selected models provided maximal assistance in developing the program structure of this study. The study group would strongly urge others investigating PPB systems to follow the same procedure.

Selected PPBS Models

Following are the summaries of the program structures of selected school districts which, in the judgment of the study group, placed emphasis on implementation of a total PPB system. Additional program structures reviewed were found to be of limited value because their major thrust was toward program budgeting, which is only a portion of a full PPB system. These program structures are also presented for reference in the Appendices.

Pearl River School District

The Pearl River School District in Rockland County, New York, has developed a PPBS plan for a district of 3,500 students. (2) The major components of the system include a program structure, a program analysis, a memorandum and a program accounting system. The program was organized on a K-12 basis in order to facilitate articulation and continuity of subject area content. Programs were identified, coded and placed into three program categories:

1. Instructional Programs
2. Instructional Support Programs
3. Community Service Programs

PEARL RIVER

I. Instructional Programs

A. Basic Education

1. English, Language Arts, and Reading K-12.
2. Science (including health), K-12.
3. Mathematics, K-12.
4. Social Studies, K-12.
5. Physical Education, Intramural and Interscholastic Athletics, K-12.
6. Business, 9-12.
7. Foreign Language, 7-12.
8. Unified Arts, (Industrial Arts, Homemaking, Driver Education, and Mechanical Drawing), 6-12.
9. Art, K-12
10. Music, K-12.

B. Special Education

1. Educable
2. Emotionally Disturbed
3. Learning Disability
4. Physically Handicapped
5. Trainable

C. Vocational Education

1. Air Conditioning and Refrigeration
2. Auto Body & Fender
3. Automotive Repair
4. Building Maintenance
5. Construction Trades
6. Cosmetology
7. Data Processing
8. Distributive Education

I. Instructional Programs (continued)

C. Vocational Education (continued)

9. Drafting & Design

10. Electricity

11. Electronics

12. Food Trades

13. Grounds Maintenance

14. Instrumentation

15. Landscaping

16. Machine Shop

17. Practical Nursing

18. Public Communications (Printing)

19. Service Station

20. Small Appliances

21. Welding

D. Continuing Education

1. Adult Education

II. Instructional Support Program

A. Learning Resources

1. Libraries, K-12

B. Pupil Personnel Services

1. Guidance & Psychological Services, K-12

2. Health Services, K-12

C. Facilities

1. Acquisition & Improvement of Facilities

2. Operation & Maintenance of Facilities

D. District Management

1. School Management

2. Central Office Management
a. Board of Education

II. Instructional Support Program (continued)

D. District Management

2. Central Office Management (continued)
b. Superintendent
c. Instruction
d. Personnel
e. Finance
f. Community Relations
g. Planning and Research

E. Transportation

1. Home to School and BOCES

F. Food Service

1. Regular Students' Lunches and Milk Program

III. Community Service Programs

A. Recreational Agencies

B. Community Groups

Included in the Pearl River PPB System was a memorandum designed to help administrators in reviewing pertinent data of each program. Data consisted of statements of objectives, descriptions of existing programs and a multi-year budget plan.

The program accounting system contains a coding mechanism to simplify fiscal accounting on a program basis. This accounting system is extremely flexible and usable for presenting financial data to both local and state agencies.

California School Districts

The design of a PPB System for the State of California is contained in a manual entitled Conceptual Design for a Planning, Programming, Budgeting System for California School Districts.(3) The program structure recommended therein consists of five categories:

1. Instruction
2. Instructional Support
3. Pupil Services
4. General Support
5. Community Service

The California Plan further sub-divides each category into six levels which progress from district-wide at Level I to individual subjects at Level VI.

One significant aspect of the above study is the consideration of objectives and criteria. These topics are rarely treated in the literature of PPBS.

Sacramento City School District

The extent to which some California school districts are responding in setting up their program budgets can be noted by examining the budget of the Sacramento City School District.(4)

Sacramento organizes its budget data into three major categories:

I. Administrative Services

II. Instructional Programs and Services

III. Supporting Services

The following is a complete listing of the individual services included within the above categories:

I. Administrative Services

- A. Board of Education
- B. Office of the Superintendent
- C. Personnel Services
- D. Planning and Research
- E. Business Services

II. Instructional Programs and Services

- A. Administration Instructional Services
- B. Curriculum Development
- C. Special Services
- D. Elementary, Junior and Senior High Schools
- E. Schools for Adults
- F. Continuation High School
- G. Summer School Program
- H. Staff Training and Summer Demonstration School
- I. Special Projects Department

III. Supporting Services

- A. Transportation
- B. Maintenance and Operation
- C. Fixed Charges
- D. Food Services
- E. Community Services
- F. General Capital Improvements

Spring Valley New York

The Spring Valley Plan incorporates all school district activities into three categories and a number of individual programs (5):

I. Curricular Programs

II. Curricular Supportive Programs

III. Special Services to the Community

These broad categories are sub-divided into individual programs of activities as follows:

I. Curricular Programs

A. Instructional Programs

1. Basic Elementary

2. Basic Secondary

3. Special Education

4. Vocational Education

5. Compensatory Education

6. Continuing Education

B. Instructional Support Programs

1. Learning Resources

2. Pupil Personnel Services

C. Student Activities

1. Elementary

2. Secondary

II. Curricular Supportive Programs

A. Facilities

1. Acquisition and Improvement of Property

2. Operation and Maintenance of Plant

B. School Related Services

1. Pupil Transportation

2. Food Services

C. Policy and Direction

1. Board of Education

2. District Coordination and Administration

3. School Level Program Coordination and Administration

III. Special Services to the Community

A. Recreation Agencies

B. Youth Activities

C. Senior Citizens

New York City School System

The program structure of the New York City School System illustrated below is a reflection of the size of the City's education endeavor (6). The wide variety of programs indicated is far more than would be necessary for a school district of less than 25,000 pupils. The following is the Program Structure which the New York City School System has derived:

I. Primary Education

A. Regular Day Elementary Schools

B. Special Service Elementary Schools

C. More Effective Schools

D. Summer Elementary Schools

E. Primary Education Administration

II. Intermediate Education

A. Regular Day Junior High School

B. Special Service Day Junior High School

C. Intermediate Schools

III. Career Preparatory Education

A. Academic Day High Schools

B. Special Day High Schools

C. Evening Academic High Schools

D. Summer Day Academic High Schools

E. Summer Evening Academic High Schools

F. Day Vocational and Vocational Technical High Schools

G. Evening Trade Schools

H. Summer Day Vocational High Schools

I. Special Programs

IV. Special Education

A. Schools for Socially Maladjusted and Emotionally Disturbed Children,"600" Schools

B. Summer Schools for Socially Maladjusted Children and Emotionally Disturbed Children

C. Schools for Physically Handicapped Children, "400" Schools

D. Occupational Training Centers for Children with Retarded Mental Development

E. Schools for the Deaf

F. Administration of Special Education

V. Research Development and Evaluation

A. Educational Program Research

B. City-wide Standardized Testing Program

C. Curriculum Research and Development

D. Administrative and Financial Research

E. School Plant Research

VI. Community Activities

A. Community Education

B. Adult Education

C. Management of Community Activities

VII. General Support

A. Administrative Support

B. Personnel and Training Support

C. Instructional Support

D. Pupil Support

E. School Plant Support

F. Non-Public School Support

G. Community Support

H. Department-wide Support

VIII. Headquarters Administration

A. Central Headquarters

B. District Headquarters

University of Pennsylvania - Bucks County

The Program Structure designed for Bucks County by the University of Pennsylvania consists of four program categories and 23 programs as listed (7):

I. Coordinative Program Area

A. Policy and Executive Program

B. Comprehensive Planning Program

1. Long Range Development Planning Subprogram

2. Planning-Programming-Budgeting Subprogram

C. Information and Liaison Program

D. Community Services Program

E. Coordinative Support Services Program

1. Program Development and Evaluation Subprogram

2. Professional Education Subprogram

3. Secretarial and Clerical Services Subprogram

II. Instructional Programs Area

A. Early Childhood Instruction Program

B. Elementary Instruction Program

C. Secondary Instruction Program

D. Vocational-Technical Instruction Program

E. Special Instruction Program

F. Continuing Instruction Program

G. Instructional Support Services Program

1. Instructional Media Subprogram

2. Pupil Assessment-Guidance Subprogram

3. Attendance Services Subprogram

4. Program Development and Evaluation Subprogram

5. Professional Education Subprogram

6. Secretarial and Clerical Services Subprogram

III. Health Program Area

A. Nursing Program

B. Medical Program

C. Dental Program

D. Psychological Program

E. Health Support Services Program

1. Program Development and Evaluation Subprogram

2. Professional Education Subprogram

3. Secretarial and Clerical Services Subprogram

IV. Business Program Area

A. General Services Program

1. Finance Subprogram

2. Personnel Subprogram

3. Purchasing Subprogram

4. Communications Subprogram

5. Data Processing Subprogram

B. Pupil Transportation Program

C. Food Services Program

D. Facilities Program

1. Operation and Maintenance of Plant Subprogram

2. Capital Improvement Program

3. Debt Services Subprogram

E. Fixed Charges Program

F. Business Support Services Program

1. Program Development and Evaluation Subprogram

2. Professional Education Program

3. Secretarial and Clerical Services Subprogram

Two interesting aspects of the Bucks County study are: 1. it has been designed in two forms to accomodate both manual and electronics operation, 2. its delineation of projects provides for short term spending on experimental activities without disturbing program budgets.

Association of School Business Officials

A federally funded project provided the A.S.B.O. with an opportunity that led to the development of pilot school districts in Clark County (Las Vagas), Nevada; Douglas County, Colorado; Herricks, New Hyde Park, Long Island, New York; Memphis, Tennessee; Milwaukee, Wisconsin; Montgomery County, Maryland; Peoria, Illinois; and Westport, Connecticut.(8)

The program categories described below are those of Westport.(9)

I. Instructional General Those programs of activity, learning activities, which are in support of the learning of the broad group of youngsters who are not considered exceptional.

II. Instructional Exceptional All of those instructional activities that are designed for the children who are either exceptional by reason of being gifted or exceptional by reason of being handicapped.

III. Instructional Support All of those activities which are in direct support of either instructional general or instructional exceptional.

IV. Non-Instructional All items that are not in direct support, such as general administration, the operation of the transportation system, the maintenance and operation of plant, etc.

V. Community Service Those activities which the school system undertakes which are not defined as being within the legal, regular responsibility of the school system.

Additional Studies

Thorough studies were also made of the program budgeting materials from the Skokie, Illinois, School District; the City of Baltimore School District; and the Hartford, Connecticut School District. (10)(11)(12) It was found that these cities did not actually have PPBS models in the sense that the study group is using the term. Instead, they were primarily program budgets.

For the information of the reader, the program structures of Skokie, Baltimore and Hartford appear in the Appendices.

Study Group Illustrative Program Structure

After reviewing the program sturctures of the above projects, the study group formulated an illustrative program structure which could be adaptable to school districts having enrollments of 25,000 students or less.

Hartley describes the task as, "...structuring the activities of the organization within a workable number of programs, meaningfully defined."(13) He further indicates that a variety of approaches have been employed in designing program structures by quoting a PPB project publication:

> There are as many different ways of putting together a program structure as there are people who will attempt it. It is very difficult to formulate generally acceptable specific "rules" for constructing one...The basic principle of an objective-oriented program structure is the grouping of activities that serve the same purpose...The topmost level of a program structure should consist of the broad categories directed toward the fundamental objectives of the jurisdiction... The lowest level in any structure would be composed of the programs that have been implemented as the specific means for moving toward the end objectives.(14)

The procedure employed by the study group in designing an illustrative program structure was to compile a listing of all conceivable activities of a school system. The list was then examined from the standpoint of categorizing each activity as to the genreal purpose it was designed to achieve. From this process emerged four classifications of activities as accepted by the study group. Focus upon the four emerging categories was sharpened by identifying the limits of each category through definition. The categories are defined as follows:

I. Instructional Category This category comprises those activities conducted by teachers and students acting together to reach the school system's educational goals.

II. Instructional Support Category This category concerns those activities directly designed to assist teachers and students functioning in the instructional program.

III. Operational Support Category This category involves activities designed to provide a suitable physical environment for learning.

IV. Policy, Coordination, and Fiscal Control Category This category concerns those activities of a command nature which comprise policy development, policy execution and control of total organization activities.

The above categories will accommodate all the activities occurring within a school system. The program structure which follows, however, is illustrative only and does not include all possible programs and sub-programs. At the program level, for example, only two of many possible subprograms have been included in each of the categories as illustrations.

The study group's decision to design a program structure encompassing Grades K-12 was based on the desirability of presenting a holistic approach which would insure articulation and integrate the educational experiences.

I. Instructional Category K-12

Programs:

A. Language Arts

Sub-Programs:

1. Language Skills

2. Literature Skills

3. Etc.

B. Mathematics

Sub-Programs

1. Computational Skills

2. Problem Solving

3. Etc.

C. Art

*D. Business Education

*E. Foreign Language

*F. Health and Safety

*G. Home Economics

*H. Industrial Arts

*I. Vocational Education

J. Music

K. Science

L. Social Studies

M. Physical Education

N. Projects

* These programs are not conducted on a K-12 basis.

II. Instructional Support Category K-12

Programs:

A. Audio-Visual

Sub-Programs

1. Closed Curcuit Television
2. Media Center
3. Etc.

B. Library

Sub-Programs:

1. Instruction in Library Science
2. Circulation of Materials
3. Etc.

C. Educational Television

D. Extra-Curricular Activities

E. Pupil Personnel Service

F. Projects

III. Operational Support Category K-12

Programs:

A. Operation of Plant

Sub-Programs:

1. Engineering Services
2. Custodial Care
3. Etc.

B. Acquisition and Improvement of Property

Sub-Programs:

1. Debt Service
2. Capital Outlay
3. Etc.

C. Food Service

D. Maintenance

E. Transportation

F. Purchasing

G. Projects

IV. Policy, Coordination and Fiscal Control Category K-12

Programs:

A. Chief School Officer Coordination

Sub-Programs:

1. Research and Development

2. Planning

3. Etc.

B. Fiscal Control

Sub-Programs:

1. Budgeting

2. Accounting

3. Etc.

C. School Board Policy Formulation

D. Building Level Administration

E. Projects

The placement of programs and subprograms into the four categories of the above program structure is largely self-explanatory if one follows the category definitions on page 27. The study group feels, however, that the following two program placements require further explanation:

1. Projects

2. Building Level Administration.

A program entitled "Projects" occurs in each of the four categories. The term refers to those activities which are experimental and therefore (1) are non-routine, less familiar and not continuing, (2) have a specific beginning and closing date, (3) are outside of the normal school district structure, (4) generally relate to a single explicit objective, (5) normally relate to change and innovation, (6) which involve high risk to the organization, and (7) are not normally divisible into sub-projects.

Another consideration for the "Project" program is that funds are sometimes generated outside the school system. Special funds are often available for school systems from the state, the federal government, and private industry for innovative projects. These projects do not meet the criteria for categories as previously established. Decisions must be made while these projects are in their seminal stages and special costs for materials, added personnel and project co-ordinators must be allocated. Evaluative devices must be incorporated into each project design so that final decisions concerning the project are made on data connected only with that project.

Since experimental projects may occur within any of the four categories, the placement of a Project program has been included in each.

The program entitled "Building Level Administration" has been placed in the Policy, Coordination and Fiscal Control Category. The study group feels that this program could be placed logically in other categories as well as in Category IV.

The Building Level Administration Program includes the building principal, assistant principals and any other personnel who have a command function. Department heads, for example, would fall into this category for the portion of time which they devote to the command activity.

The study group feels that building level adminsitration is involved with implementation, execution and control of policy over all the programs within the building for which responsibility has been assigned. While programs are organized on a K-12 basis, it is fully intended by the study group that a building principal serve as operations manager for all programs conducted within his building. This designation for the function of the building principal in a systems-oriented program structure implies that present and future success of the total operation of the school district hinges upon the principal's managerial skills in many areas. A principal in an elementary school would be the operations manager for all programs conducted in K-6, even though the total program structure is a K-12 structure.

The command function of policy execution, as well as the responsibility for all programs occurring within the building, has caused the study group to place building administration in the Policy, Coordination and Fiscal Control Category. The study group recognizes that a rationale can be advanced for placement in another category, but feels that in this activity-oriented program structure, the placement is most logical in Category IV.

Also noted in the above program structure is the absence of summer school and office staff. The study group is of the opinion that summer school offerings be included within the programs of their respective subject areas, since they are a logical outgrowth of the subject involved. The study group further feels that office staff be included

within the appropriate programs since such staff serves the needs of that program.

The study group recommends that after a PPB system is in operation in a school district, the district should alter its program structure in order to more closely incorporate individual district needs and activities.

Personnel

The personnel needed to operate the recommended program structure are those usually found in a school system. Individuals who are responsible for the implementation of a particular program, sub-program, or sub-program element are called managers of the level involved. To illustrate, responsibility for activities within the Language Arts program might be depicted as follows:

I. Instructional Category--Instructional Category Manager (Director of Curriculum)

Operations Manager--(Principal)

A. Language Arts Program--Program Manager (Language Arts Coordinator)

1. Language Skills--Sub-Program Manager (Department Head)*
(a) Grammar--Sub-Program Element Manager (Teacher)

A number of factors may require a different alignment of personnel than depicted in the illustration above. Such considerations as school district size, administrative staffing adequacy or administrative philosophy might alter the personnel assigned responsibility as manager of the levels above that of teacher. Whether a director of curriculum, subject matter specialist, or director of instructional services is assigned as manager

* The department head may be manager of more than one sub-program (i.e., Literature Skills, Composition Skills)

at a particular level is of less consequence than the fact that managerial responsibility be assigned for each level.

The study group strongly contends, however, that the building principal functions as operations manager for all programs within his building.

A sound program structure will provide for the logical arrangement of the activities of the school system. A determination of the effectiveness of school activities, however, is achieved by the use of program criteria. The following section of the chapter deals with the process of developing program criteria as well as the presentation of illustrative program criteria.

Illustrative Program Criteria

Procedures for the Development of Program Criteria

The program criteria are the measures which can be used to evaluate the effectiveness of a given course of action over a specified time period. The following section of the chapter serves as a model for the development of program criteria and focuses upon the experiences of the study group in devising a logical pattern for this task. The steps evolved in the following sequence:

1. A determination of the nature and development of objectives and measurement.
2. A review of existing literature concerning program criteria.
3. An examination and evaluation of the existing objectives of the school system.
4. A determination of the desired objectives and the means by which they can be measured.

1. A Determination of the Nature and Development of Objectives and Measurements

A major concern in the development of objectives is the phenomena of change to be produced in individuals as a result of educational experiences. A classification of these experiences was undertaken by Bloom.(15) His classification system, or taxonomy, resulted in a three-fold division of educational objectives: the cognitive, affective, and psychomotor domains. An understanding of this taxonomy will readily facilitate placement into one of the three major domains. It should be noted, however, that no objective in one domain is entirely devoid of the other two.

The cognitive domain includes those objectives which emphasize the recall or recognition of knowledge and the development of intellectual abilities and skills. The largest proportion of educational objectives falls into this domain.

A taxonomy of educational objectives in the affective domain was undertaken by Krathwohl et al.(16) It includes objectives which describe changes in interest, attitudes and values, and the development of appreciations and adequate adjustment. Objectives in this domain are not precise. This imprecision creates difficulty in the design of appropriate learning experiences.

Krathwohl et al., states,

> Perhaps the central research problem posed by the affective domain is how to evaluate affective objectives with greater validity, reliability, and objectivity. In this volume we cite many techniques for appraising such objectives, but we are fully aware of the fact that much must be done before the development of testing techniques in the affective domain will reach the rather high state of clarity and precision which is now possible in the cognitive domain.(17)

Educational objectives which are classified in the psychomotor domain emphasize some muscular or motor-skills, some manipulation of materials and objects, and acts which require a neuromuscular coordination. Few such objectives can be found in the literature.

System-wide objectives for school districts, usually defined as global or far-reaching objectives, generally fall in the affective domain, causing difficulty in their measurement. Significant growth can be plotted more readily when there are experiences stated in behavioral terms in the cognitive domain. Few affective evaluative techniques

are available at the school level to determine student development or behavior. At the present time, there is no systematic effort to collect evidence of growth in affective objectives which in any way parallels the very extensive and systematic efforts to evaluate cognitive achievements.

An analysis of the classification system of educational objectives indicates the desirability of formulating educational objectives in the cognitive domain to better facilitate evaluation. Krathwohl et al., state,

> This is not to say that all is well in the testing of cognitive objectives. A great deal of research in testing methods is still necessary for this domain. However, the state of the art of testing is far more fully developed in the cognitive domain than it at present true in the affective domain.(18)

2. A Review of Existing Literature Concerning Program Criteria

A review of present PPB systems revealed a lack of significant information which could be useful in a model for the development of program criteria. In some instances, however, brief mention is made of the need for a method which could evaluate or measure the objectives and which would be included in the statement of objectives. Local, New York State and regional sources likewise proved to be of little value in most instances, since they lacked specific information about criteria. However, the study group found some guidelines for developing program criteria in the New York State Education Department Syllabus for Language Arts.(19)

Mager discusses a scheme for incorporating the desired behavior of the learner into the statement of objectives. The scheme is as follows:

> First, identify the terminal behavior by name; you can specify the kind of behavior that will be accepted as evidence that the learner has achieved the objectives.
>
> Second, try to define the desired behavior further by describing the important conditions under which the behavior will be expected to occur.
>
> Third, specify the criteria of acceptable performance by describing how well the learner must perform to be considered acceptable.(20)

The study group felt that Mager's scheme presented the most useful guide to the writing of program criteria.

3. An Examination and Evaluation of the Existing Objectives of a School System

System-wide objectives for school districts will in most instances be global and best classified in the affective domain, according to Bloom's Taxonomy of Educational Objectives(21) This need not present a block to the development of behavioral objectives which must be stated in measurable terms. Global objectives at the school district level are acceptable provided the program level has specific objectives stated in measurable terms. In effect, the measurement of specific objectives at the lower curricular levels will relate to and facilitate measurement of the district-wide global objectives.

4. A Determination of the Desired Objectives and the Means For Their Measurement

A review of curriculum guides and New York State Education Department Syllabi is suggested for the purpose of setting forth general and specific objectives essential to the writing of program criteria. The specific objectives must be stated in measurable terms which can be realistically evaluated.

After careful examination of local, state and national norms as possible measurable criteria, it was the judgment of the study group that the establishment of local norms would be both desirable and valuable. While analyzing these local, state and national norms, the study group noted the absence of measurable criteria in many areas of activity within a school program. Local norms would, therefore, provide a point of departure for later measurement. This, however, does not preclude the use of state or national norms when they are available and appropriate.

Although the review of the literature on objectives succintly pointed out the advisability of stating objectives in the cognitive domain for measurement purposes, the study group did not dismiss objectives in the affective domain. In the Illustrative Program Criteria, which follow, measures were devised to evaluate an appreciation and an awareness of literature, which are objectives in the affective domain.

Illustrative Program Criteria

Employing the procedures for the development of program criteria outlined in the previous section, illustrative program criteria were developed in the area of Language Arts.

After selecting a district-wide global objective expressed in the affective domain, specific objectives in the cognitive domain were developed. Suggested techniques for measurement are offered as a means of illustrating the quantifiability of objectives at the sub-program level.

To enable a school system to measure the program criteria specified in this chapter, the school must establish local norms for its pupils which may evolve from existing data available within the school. If existing data are not available or functional, however, the school may select an available standardized evaluation which would produce baseline data.

The purpose of baseline information is to determine the present achievement level as a point of departure. The district will establish what it considers a reasonable level of achievement, the number of students expected to achieve that level, and the type of evaluation technique which will be used.

For illustrative purposes, a selected general objective in Language Arts will be used as follows:

General Objectives:	To help students learn to communicate in society.
Criteria:	A student will demonstrate a knowledge and usage of grammar, vocabulary and spelling.
Evaluation:	At the end of grade 6:

a. 3 of 4 students will score at the 50th percentile on the capitalization, punctuation and usage sections of the Iowa Test of Basic Skills.

The following Illustrative Program Criteris in the area of Language Arts are designed to measure performance at the end of both grade six and grade twelve. It has been reviewed by Mrs. Quida Clapp, Director, Language Arts, Buffalo Public Schools and Dr. Douglas Houck, Supervisor, Curriculum Evaluation and Development, Buffalo Public Schools. It is their judgment that the program criteria are realistic and achievable in a school system.

The criteria appearing below are based upon measurement techniques at the end of Grade 6 and Grade 12. The selection of Grade 6 would be most applicable to a 6-3-3 grade organizational structure. Those districts organized on a middle school, intermediate school, or non-graded basis may conduct a measurement of criteria at any level which it considers logical. Indeed, a school system, regardless of grade organization pattern, may wish to employ measurement techniques at more frequent intervals.

I. Language Skills

A. The student will demonstrate a knowledge and usage of grammar, vocabulary and spelling. A suggested technique for measurement is:

1. At the end of Grade 6:

a. ____ of _____ students will score at the ____ percentile on the capitalization, punctuation and usage sections of the _____ test.

b. ____ of _____ students will score at the _____ percentile on the spelling section of the _____ _____ test.

c. ____ of _____ students will score at the _____ percentile on the vocabulary section of the _____ _____ test.

2. At the end of Grade 12:

a. _____ of _____ students will score at the ____ percentile on the capitalization, punctuation and usage sections of the _____

b. _____ of _____ students will score at the ____ percentile on the spelling section of the _____ _____ test.

c. _____ of _____ students will score at the ____ percentile on the vocabulary section of the _____ _____ test.

II. Literature Skills:

A. The student learns to appreciate, evaluate and recognize various kinds of literature. A suggested technique for measurement is:

1. At the end of Grade 6:

a. _____ of _____ students will identify the many kinds of literature by being able to identify ____% of items on a listing of titles differentiating the forms of literature taken from the suggested list of the National Council of Teachers of English.

b. _____ of _____ students will demonstrate an awareness of literature by maintaining an annotated bibliography of student reading to be inserted in their cumulative record. ____% of students shall read ____ books in Grade 6. Other possible verification could include written and/or oral reports and teacher-prepared tests.

2. At the end of Grade 12:

a. _____ of _____ students will show evidence of the development of their own library by submitting an annotated bibliography of the home library to their teacher. ____% of the students will have _____ books in their home library.

b. _____ of _____ students will demonstrate the ability to review, discuss, interpret and evaluate the various kinds of literature by satisfactory performance as determined by the teacher in seminar session. Performance shall be determined by the Student's ability to substantiate his interpretation, by formation of logical thought, and by depth of perception.

III. Composition Skills:

A. The student learns to organize and develop through writing his ideas and experiences. A suggested measurement technique is:

1. At the end of Grade 6:

a. _____ of ____ students will recognize the many types of sentences (i.e. simple, compound, complex, interrogative, declarative, etc.) by achieving a grade of ____ on a school-wide teacher-made objective test.

b. _____ of ____ students will demonstrate the use of the above sentences by achieving a grade of ____ on a test of three paragraphs, graded according to the following guidelines contained in the New York State Education Department English Curriculum.

1. Has the pupil a clear idea?
2. Are his points so arranged as to aid in clear expression of that idea?
3. Does his first sentence offer interesting introduction?
4. Does it attract attention?
5. Does it prepare for what follows?
6. Does his final sentence reinforce his idea or give it an effective rounding out?

2. At the end of Grade 12:

a. _____ of ____ students will demonstrate an ability to plan and compose clear orderly, effective written communications by achieving a grade of ____ on a literary or technical manuscript. The evaluation of the manuscript will be according to a technique devised by English teachers and students considering such categories as the following:

1. Clarity of ideas
2. Precise expression of ideas
3. Introduction of theme
4. Originality of thought
5. Logical reinforcement of thought
6. Effective conclusion.

IV. Listening and Speaking Skills

A. The student learns to demonstrate effective listening and speaking skills for oral communications. A suggested measurement technique is:

1. At the end of Grade 6:

a. _____ of ____ students will differentiate between hearing and listening by achieving a grade of ____ on a school-wide teacher made test involving responses to material presented by way of tape recording.

b. _____ of ____ students will be able to express a complete thought orally as evidenced by a grade of ____ on a school-wide teacher developed rating scale. Students are to be evaluated on the basis of a single observation by the teacher of a descriptive oral presentation. The rating scale should contain categories as:

1. Logical ordering of thought
2. Diction
3. Intonation
4. Persuasiveness
5. Interest generated

2. At the end of Grade 12:

a. _____ of ____ students will demonstrate the ability to express his thought and opinions effectively, with clarity and responsibility through the many methods of oral communication. This will be evidenced by a grade of ____ on a school-wide teacher developed rating scale. Students are to be evaluated on the basis of multiple observations under a variety of circumstances, both formal and informal, and should contain such categories as:

1. Logical ordering of thought
2. Diction
3. Intonation
4. Persuasiveness
5. Interest generated

b. _____ of ____ students will demonstrate the ability to listen for specific information, perceive relationships and to detect attitudes by achieving a grade of ____ on an objective test from a tape recording.

Summary

Chapter II has focused on two vital elements of a programming compontent of a PPB system: the program structure and the program criteria.

After examining existing PPBS projects, the study group devised a program structure which can be most applicable to a school district with a student population of 25,000 or less. The study group believes the illustrative program structure can be implemented without significant restructuring of an existing school system.

Program criteria were developed for measuring the effectiveness of a given choice of action over a specified time period. The need for objectives stated in the cognitive domain was of primary concern to the study group. Locally based norms should be used as a means of focusing upon the specific needs of the school district.

The successful operation of a PPB system is dependent upon accurate feedback mechanisms as a means of measuring and reporting the effectiveness of programs. These feedback mechanisms will be the content of the next chapter.

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4. Melvyn F. Lawson, Adopted Budget and Financial Information, (Sacramento, California: Sacramento City Unified School District, 1967-1968), pp. 147.

5. Sol Levine, Ramapo Central School District #2, 50A South Main Street, Spring Valley, New York. A letter to Dr. Kiser at State University of New York at Buffalo, October 31, 1969, contained the Program Structure for Spring Valley.

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CHAPTER III

FEEDBACK MECHANISMS

Introduction

The Western New York PPBS Project is intended to facilitate the implementation of a systems approach to educational planning, programming and budgeting. If a systems approach is to succeed, adequate mechanisms must be incorporated which will provide information on how well the actual performance of the system matches the planned performance. In other words,

> ...any system, if it is to achieve a predetermined goal, must have available to it at all times an indication of its degree of attainment. In general, every goal-seeking system employs circuits, or feedback.(1)

The feedback portion of a system is

> ...a set of procedures...which provides information on how well the actual performance of the system matches the planned performances.(2)

In addition, the feedback portion makes decisions to alter the system, and introduces these decisions to the system.

The diagrams on the following pages (Figs. 1 - 9) illustrate the relationship of general systems to their feedback components. Subsequent to these diagrams is a series of procedures and forms designed by the study group as a portion of the feedback component of the Western New York PPBS Project, (see Chapter I).

The procedures and forms provide a means by which the function and costs of instruction are monitored and evaluated on an ongoing basis. The effectiveness of the education process will be measured according to the system's stated objectives. Measurement data are then channeled to the proper administrators, or superiors, so they can determine whether or not the job is being done. With this information at hand, the administrators can then make better decisions on a program.

In light of present teacher interest in curriculum, the study group recommends the formation of a Program Review Committee. This committee would consist largely of teacher representatives whose function would be to make recommendations to the director of curriculum regarding ongoing and proposed curricula.

Description of Model

The model below illustrates feedback within an educational system.(3) Here, inputs (students) are being processed interacting with curriculum to produce an output (behavior change). The feedback loop represents the evaluative procedure where actual behavioral change is compared with desired behavioral change (objective).

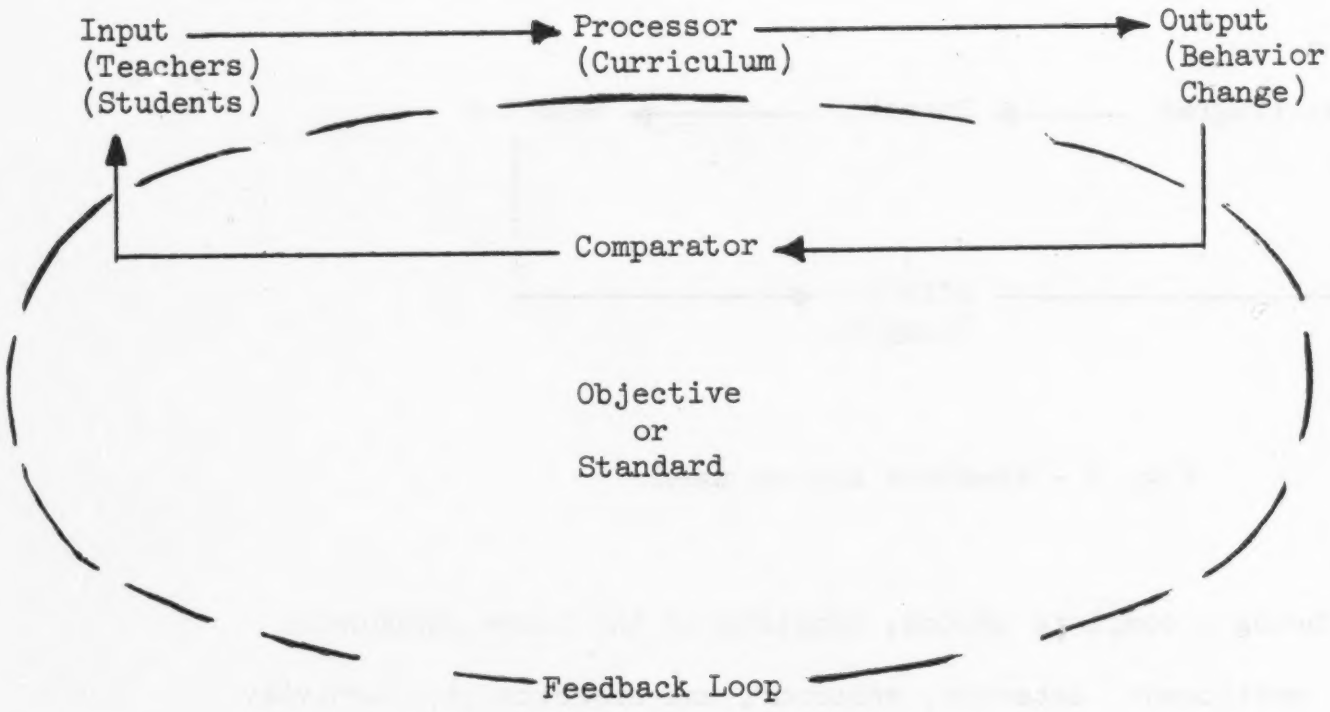

Fig. 1 - Feedback loop in a system

The evaluation is performed by a person known as the comparator and may reveal variance between the desired and achieved results. Once the comparisons have been made, decisions must be made to modify the actions of the system in order to minimize variance between actual and desired change. If the system is to benefit from these decisions, actions must be taken to incorporate them in the system's activities.

Feedback System Model

Whereas the preceeding model illustrates the role of feedback within a system, the following model depicts feedback as a system in itself.

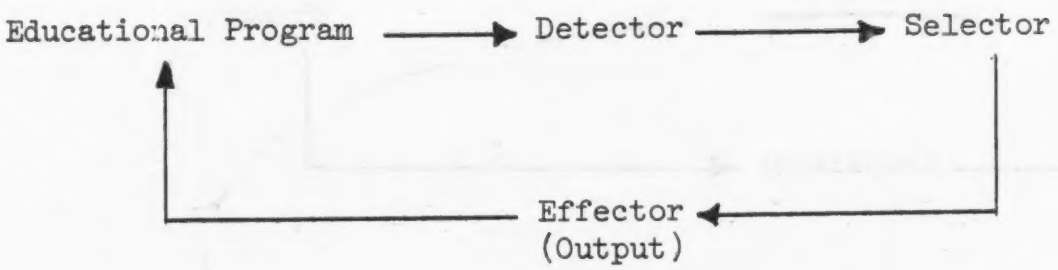

Fig. 2 - Feedback system model

Feedback, being a complete system, consists of the three components previously mentioned: detector, selector, and effector.(4) Activity in the feedback system begins when the detector collects data which indicate to what extent the educational program is reaching its objectives. These collected data constitute input to the feedback system. For example, the output (student behavior change) of a program (Language Arts) must be compared with the desired results for this program. One method by which this may be accomplished is through the teachers' comparisons of actual students' behavioral change with desired behavioral changes specified in the program criteria. At this point, the selector becomes operative by selecting courses of action to be taken to minimize variance between desired and actual results. This selection is based upon past decisions and projected feasibility of alternative solutions. Once a suitable alternative has been selected, a plan of action must be devised for implementation in the program's activities. This process of transferral from decision to implementation is accomplished by the effector. For example, if the detector (e.g., teacher and measurement instrument) indicated that most students did not read

enough, the selector (e.g., subject matter specialist) might come to the conclusion that a library period is needed. The effector (e.g., subject matter specialist or director of curriculum) would then take this information back to the program and report the specific recommendations.

Description of Functional Feedback Model

The following model (Fig. 3) illustrates the function of detectors and selectors as conceived by the study group.

Forms, designated by capital letters, are designed to deliver information in a useful manner to personnel concerned with fiscal and curricular decision-making. It is probable that informal lines of communication will be utilized, but the study group has concerned itself only with those areas directly in line to receive the information concerning the cost and success of instructional programs.

Functional Feedback System

(Figures 3 - 9)

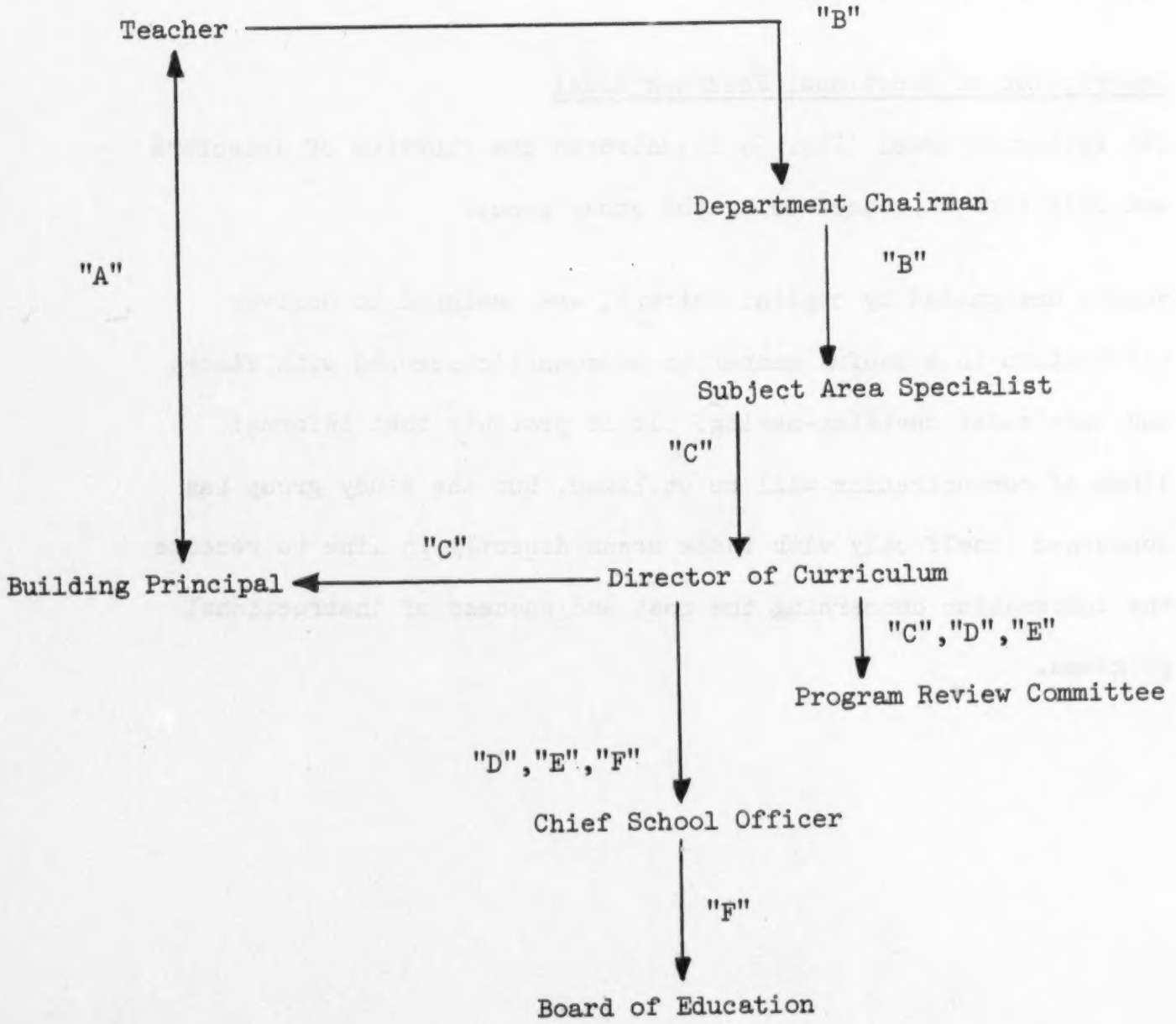

Fig. 3 - Overall form routing

Form A - Will communicate categories of action which the teacher feels are needed to maximize subprogram effectiveness.

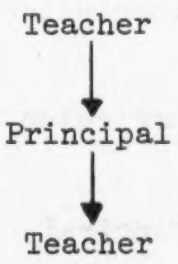

Fig. 4 - Form A, routing

Form B - Measures the progress toward the system-wide objective in terms of the subprogram element criterion.

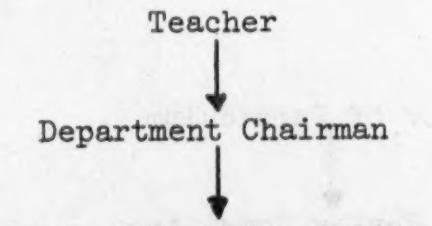

Fig. 5 - Form B, routing

Form C - Tabulates data in order to facilitate recognizing problem areas.

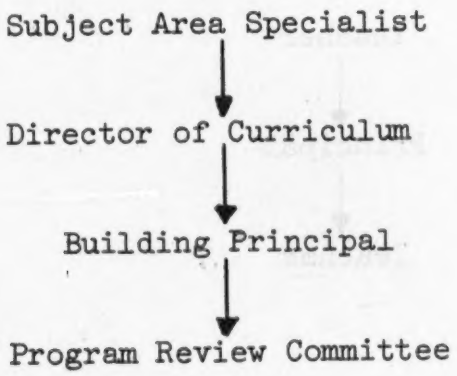

Fig. 6 - Form C, routing

Form D - Provides historical data about a particular problem in order to facilitate decision-making.

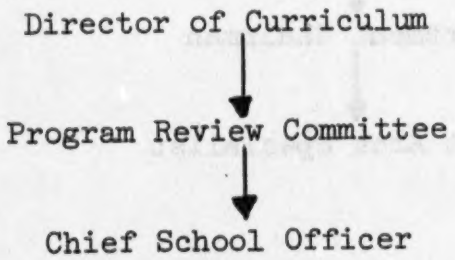

Fig. 7 - Form D, routing

Form E - Facilitates communication between the Director of Curriculum, Program Review Committee and Chief School Officer.

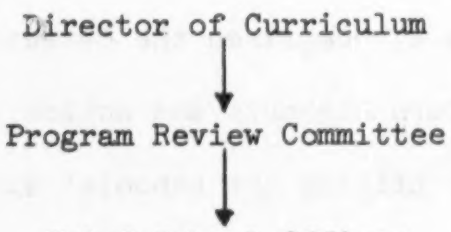

Fig. 8 - Form E, routing

Form F - Provides information for pre-budget review of program effectiveness and accuracy of cost projections.

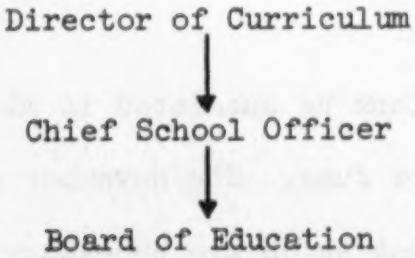

Fig. 9 - Form F, routing

Forms A through F facilitate recording the results of the detection process. Selection is accomplished in part by the use of the data provided by the detectors. One complete cycle of the feedback system can be illustrated by the use of Form A. Here we see that the teacher and the principal are involved. The teacher, along with the utilization of Form A, comprises the detector. The principal is the selector, and his return comments and action represent the effector. Forms B through F utilize the schools' existing lines of communication to perform the effector function.

Form A - Sub-Program Element Appraisal

Form A is a direct means of communication between the teacher and principal concerning problems falling within the principal's jurisdiction. It consists of the teacher's appraisal of the extent to which a sub-program element has been successful in meeting its objectives. In addition, it contains a checklist that teachers may use to indicate the extent to which change in a variety of conditions is needed in order to maximize program element effectiveness.

It is recommended that this form be submitted in mid-November, mid-February and at the end of June. The November and February dates allow for any corrections which are necessary during the current year. The third date will permit the principal time to review this information after the close of the school year.

It should be noted also that there may be times when the teacher would like to react to a specific aspect of the sub-program element.

This may be accomplished by submitting this form at additional times as the need arises.

It is important for the principal to notify the teacher that he has seen the form. It may help if Section 3 is designed as either a tear-off sheet or carboned sheet to facilitate this response, (see illustration on following page).

Form A Sub-Program Element Appraisal

From:	(S.P.E.) Title
Date:	(S.P.E.) No.

Section 1 to be completed by teacher

Directions: The following categories allow you to indicate your assessment of this sub-program element. Your comments will help determine ways our school can increase the effectiveness of educational programs. Indicate below the extent to which the following categories are needed to maximize the effectiveness of the sub-program element by placing an "X" in the appropriate column of the continuum. Space is provided below to comment on categories checked.

Categories	Presently Sufficient 1	2	3	Great Need For Change 4	5
Physical Facilities		X			
Student Enrollment				X	
Student Grouping					X
Time Allocation	X				
Staff Allocation				X	
Inservice Education	X				
Non-instructional Staff	X				
Classroom Supplies	X				
Office Supplies		X			
A.V. Supplies	X				
Instructional Supplies	X				
Other					

Comments: (Place additional comments on back)

Need to regroup my class, the differences of ability in my class are too extreme.

Section 2 to be completed by teacher

Indicate below your assessment of the degree to which the stated objectives of the sub-program element are presently being met: (Place "X" in box)

Slightly 1	2	3	4	Completely 5
			X	

Section 3 to be completed by principal

Comments or action taken:

Fig. 10 - Form A

Form B - Sub-Program Element Survey

Form B is a means of obtaining from the teachers a detailed description of the extent to which specific sub-program element criteria are being accomplished. The information reported on this form will consist of: 1. the general objective for the sub-program element; 2. the criteria for the sub-program; and 3. the actual student achievement measured as stated in the criteria.

The desired results listed in the criteria are computed on previous years' (1-5) results with the same or similar students.

Form B serves an additional function in that it keeps school system objectives and sub-program element criteria before the teacher. This action facilitates teacher understanding of the relationship between his/her daily teaching routine and the overall, system-wide objectives. The measurable criteria serve to clarify the general objectives and provide a means-ends chain to their attainment, (see illustration on following page).

Form B Sub Program Element Survey

From:	(S.P.E.) Title
Date:	(S.P.E.) No.

Directions: Teacher will: (1) state the general objective and criteria as specified in sub-program element description; and (2) list results achieved on measuring techniques utilized.

General Objective: To help students learn to communicate order to function in society.

I Criterion: The student will demonstrate a knowledge and usage of grammar, vocabulary, and spelling.

Measuring Techniques : Administer the science research associates test section dealing with capitalization.

Numerical Results:

Desired	Achieved
____ of ____ students will score at the ___% on the S.R.A. test section dealing with capitalization.	____ of ____ students achieved at the ___% on the S.R.A. test section dealing with capitalization.

Fig. 11 - Form B

Form B Sub Program Element Survey (continuation sheet)

____ Criterion:

Measuring Techniques: Administer the science research association test on the section dealing with spelling

Numerical Results:

Desired: ____ of ____ students will score at the ___% on the S.R.A. test section dealing with spelling

Achieved: ____ of ____ students achieved at the ___% on the S.R.A. test section dealing with spelling

____ Criterion:

Measuring Techniques : Administer the science research association test on the section dealing with vocabulary

Numerical Results:

Desired: ____ of ____ students will score at the ___% on the S.R.A. section dealing with vocabulary

Achieved: ____ of ____ students achieved at the ___% on the S.R.A. section dealing with vocabulary

Fig. 12 - Form B continuation sheet

Form C

Form C consists of the subject matter specialists' tabulations of the data collected on Form B. The tabulations provide the program coordinator with the ready means for comparing program, sub-program, and sub-program element performance, unit and system-wide.

The data can be utilized to analyze objectives, criteria, and a variety of teaching-learning situations. One must remember that the purpose of the information is not to provide indictments of teachers, but instead to point up for further study situations that vary from the norm. The data may even indicate that a re-evaluation of the sub-program element criteria is needed.

Student achievement information from Form B is presented on Form C in terms of its relationship with the sub-program element criteria. The relationship is termed the effectiveness ratio and is indicated by dividing actual student achievements (number of students achieving a desired level) by the desired achievements described in the sub-program element criteria.

Examination of the effectiveness ratios listed horizontally for each criterion helps to determine the appropriateness of criteria and desired performance levels (norms). For example, ratios of approximately 1.0 indicated across a particular row may indicate accurate norms and acceptable criteria. Consistently low ratios (.1, .7) may reveal norms that are too high, whereas high ratios (1.0 and above) may indicate low norms. Examination of vertical columns will indicate the degree to which criteria are being

successfully accomplished in individual teaching situations. If, for example, examination of a vertical column indicates effectiveness of .9 or higher, for all but one or two criteria, further study of the areas of low effectiveness may provide a solution to the problem. Low effectiveness on all criteria indicated that something is happening that warrants examination. Further study may reveal a high incidence of student absence, insufficient funding, ineffective teaching, or any or a variety of factors. A column that contains many effectiveness ratios exceeding 1.0 indicates an unusually successful teaching-learning situation which also warrants further study to reveal transferable factors.

The effectiveness ratio-level previously referred to is an example of what the Fels Institute of the University of Pennsylvania describes as an indicator. It is explained as follows:

> An indicator, especially as it is used in this educational PPBS, is a measure of quantifiable factors which allows an experienced administrator to estimate the overall results of a number of programs and projects. The word indicator is a much less precise term than either output or performance measure.(5)

Our utilization of effectiveness ratios as indicators is significant in that it provides the administrator with a common denominator for examining a variety of instructional activities.

Form C Sub-Program Element Data Tabulation

From:	(S.P.E.) Title
Date:	(S.P.E.) No.

Directions: Subject matter specialist will; (1) enter sub-program element numbers from Forms B; (2) enter criterion as specified on Forms B; (3) enter system-wide achievement goal as specified in sub-program description; (4) enter performance data for each criterion; (5) enter effectiveness data for each criterion; (6) enter school-wide performance effectiveness data for each criterion; (7) enter system-wide performance effectiveness data for each criterion; (8) enter performance and effectiveness data for previous year as listed on previous year's form.

Criterion: (1) The student will demonstrate a knowledge and usage of grammar, vocabulary and spelling		Sub-Program Element Number										
	System Goal	4063128	4063129	4063124	4063125	4063126	4063127	School Wide Performance	System Wide Performance	Previous Year, System Wide		
(1) 1 of 2 students will score at the 60th % on the capitalization punctuation and usage sections of the test	50%	10/20	15/20	5/20	5/20	15/20	10/20	30/60	60/120	60/140		Perform
		1.0	1.5	.5	.5	1.5	1.0	1.0	1.0			Eff.
												Perform
												Eff.

Fig. 13 - Form C

Form C Sub-Program Data Tabulation

Procedure: To record the performance for a particular sub-program

↓

refer to Form B and

↓

place the number achieved (10) over the total number of students in the class (20) (see example below)

(Illustrative Only)

Form C

_____ sub-program no.

System Goal	4063128	4063129	4063124	4063125	
					Perform
					Eff

Form B

_____

Numerical Results:

Desired	Achieved
50%	10 out of 20

Fig. 14 - Form C, recording performance

Form C Sub-Program Data Tabulation

Procedure: To determine the effectiveness ratio for a particular sub-program

↓

refer to Perform row and

↓

divide the performance fraction (10/20) by

↓

the desired result indicated on Form B. This desired result may be converted to a fraction.
50% = 1/2

↓

The computation for effectiveness ratio is

↓

$$\frac{10}{20} \div \frac{1}{2} = \frac{10}{20} \times \frac{2}{1} = \frac{20}{20}$$

↓

which equals 1.0

↓

1.0 is the effectiveness ratio and is placed in the appropriate box on Form C (see example below).

(Illustrative Only)

Form C

_____ sub-program no.

System Goal	4063128	4063129	4063124	
	10/20	15/20	5/20	Perform
	1.0	1.5	.5	Eff

Form B

_____

Numerical Results:

Desired	Achieved
50%	10 out of 20

Fig. 15 - Form C, computing sub-program effectiveness ratios

Form C Sub-Program Data Tabulation

Procedure:

To record the school-wide performance figure for a school

↓

add the number of students from the sub-program elements who achieved (10,15,5) and place this total (30) over

↓

the total number of students who were in the class (20,20,20 = 60).

↓

Place in the appropriate box under school-wide performance (see example)

To record the school-wide effectiveness figure for a school

↓

add the effectiveness ratios of the sub-program elements (1.0, 1.5, .5)

↓

and compute the average. (3.0 out of a possible 3.0)

$\frac{3.0}{3.0} = 1.0$

↓

Place this figure (1.0) in the appropriate box under school-wide performance.

(Illustrative Only)

Form C Sub-Program Element No.					
System Goal	4063128	4063129	4063124	School-Wide Performance	
	10/20	15/20	5/20	30/60	Perform
					Eff

Fig. 16 - Form C, computing school-wide performance and effectiveness

Form D

Form D is an historical treatment of the cost and effectiveness of an instructional program category or sub-program. It consists of a record of performance over the past five years, the projected and actual cost for each of the past five years, present cost and performance data, and five-year projections for future cost and performance. This form serves a dual function. If upon examination of Form C the director of curriculum recognizes a problem, he should bring it to the attention of the chief school officer or the program review committee by initiating Form D, the critical issue form. For example, the director of curriculum may find that a particular program is falling far short of achieving its objectives having an effectiveness ratio of .6. If the chief school officer or the program review committee desires an historical treatment, such as this, concerning some portion of an instructional program, the director of curriculum may be instructed to prepare a critical issue form on the topic.

Information regarding past performance necessary for completion of this form will be available in the school system's files once PPBS is implemented.

This "encapsulated problem" approach provides the recipient with a variety of data useful in resolving the stated critical issue or problem.

Form D Critical Issue

From:	(S.P.E.)
Date:	(S.P.E.)

Directions: The following to be completed by director of curriculum.

Describe critical issue:

Sub-program No. 4063212 has not been meeting its objectives over the last year.

Directions: In space below enter date for each of the past five years and the system-wide effectiveness ratio for each of these years as listed on Form C.

Past performance data:

Year	1969	1968	1967	1966	1965
Effectiveness	.5	.7	.8	.8	.7

Directions: Indicate for each of the next five years the desired system-wide achievement goals for this sub-program element. Further criteria may be specified on additional sheets.

Year	Criteria
1969	60% will score at the 80th% on test (to be specified)
1970	63% will score at the 80th% on test (to be specified)
1971	66% will score at the 80th% on test (to be specified)
1972	68% will score at the 80th% on test (to be specified)
1973	70% will score at the 80th% on test (to be specified)
____	
____	
____	

Fig. 17 - Form D

Form D Critical Issue (continuation sheet)

Directions: Indicate in the space below: (1) date of the present year and the five succeeding years, (2) project sub-program element cost for each of these succeeding years.

Projected cost data:

Year	Present 1970	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4	Fiscal Year 5
Cost	$ 200	$210	$220	$230	$240	$250

Directions: Indicate in the space below; (1) the dates of the past five years, (2) the projected sub-program element cost for these years, (3) actual sub-program element cost.

Past financial performance:

Year	1969	1968	1967	1966	1965
Projected cost	190	180	170	160	150
Actual cost	190	178	172	159	152

Recommendations of director of curriculum:

Due to the fact that this decline in effectiveness is for a one-year span, I recommend that the subject matter specialist meet with the teacher and discuss teaching strategies.

Fig. 18 - Form D, continuation sheet

Form E

It is recommended if Form D is prepared for either the chief school officer or the program review committee, the remaining party will receive a memorandum, Form E, to this effect. This allows for a copy of the original to be sent, if requested. Upon receiving the memorandum, the party may also request a copy of Form D.

Form F

The final feedback form in this chapter is Form F. This form provides data for pre-budget review by the board of education relating to the cost and effectiveness of instructional programs. The following figures illustrate the manner in which actual program effectiveness ratios may be computed.

Form E Critical Issue Memo

From:	(S.P.E.) Title
To :	(S.P.E.) No.

A critical issue form has been prepared by the office of the Director of Curriculum.

Subject of form:

Sub-program No. 4063212 has not been meeting its objectives over the last year.

Requested by: Chief School Officer

Date of request: _____

Comments:

Fig. 19 - Form E

Form F Budgetary Review

From:	Date:
To :	

Directions: Director of Curriculum will: (1) list program titles and program numbers; (2) list system-wide achievement levels; (3) list actual system-wide achievement levels; (4) list effectiveness ratios; (5) list projected costs; (6) list actual cost; (7) list accuracy ratio.

Program Title	Program Number	Desired Achievement Level	Actual Achievement Level	Effectiveness Ratio	Projected Cost	Actual Cost	Accuracy Ratio
English 12		50%	60%	1.2	$100	$90	.90

Fig. 20 - Form F

Form F Budgetary Review

Computing desired achievement level

Procedure:

To find the overall desired achievement level for a program

↓

add all the system goal figures, given on Form C.

↓

The average of these figures is the desired achievement level.

Fig. 21 - Form F, computing desired achievement level

Form F Budgetary Review

Computing actual achievement level

Procedure:

To find the overall actual achievement level for a program

↓

add the numerators (number of students who achieved) of all criteria as reported in the system-wide performance columns on Form C.

↓

Add all the performance denominators (number of students who took tests) of all criteria as reported in the system-wide performance columns on Form C.

↓

Divide the numerator by the denominator to find the actual achievement level figure.

Fig. 22 - Form F, computing actual achievement level

Form F Budgetary Review

Computing effectiveness ratio

Procedure:

To compute the effectiveness ratio of a program

↓

divide the figure given in the column actual achievement level by

↓

the figure given in the column desired achievement level

↓

The quotient becomes the effectiveness ratio for the program and should be placed in the appropriate column.

Fig. 23 - Form F, computing effectiveness ratio

Form F Budgetary Review

Computing cost accuracy ratio

Procedure:

To find the cost accuracy ratio for a program

↓

subtract the actual cost figure for the program (Form F)

↓

from the projected cost figure for the program (Form F).

↓

The difference will be either a plus or a minus figure.

↓

Treat the answer as a positive figure.

↓

Divide the above figure by the projected cost.

↓

Subtract the quotient from 1.00. The result is the cost accuracy ratio.

Fig. 24 - Form F, computing cost accuracy ratio

FLOW CHART OF INFORMATION CONCERNING

THE COST AND SUCCESS OF INSTRUCTIONAL ACTIVITIES

1. (NOVEMBER, FEBRUARY, JUNE)

1.1 Utilizing Form A, the teacher indicates his or her appraisal of the extent to which a sub-program element has been successful in meeting its objectives, and the extent to which change in any of a variety of conditions is needed in order to maximize sub-program element effectiveness. The teacher then sends this form to the building principal.

1.2 The principal reviews the teacher's requests for changes in conditions and decides upon a course of action. The principal then takes action and informs the teacher or sends the teacher an explanation of future action to be taken.

2. (JANUARY, JUNE)

2.1 Utilizing Form B, the teacher describes the extent to which specific sub-program element criteria are being accomplished. The information reported consists of: 1. the general objective for the sub-program element; 2. the criteria for the sub-program element; 3. the actual student achievement measured as stated in the criteria. Teacher sends Form B to the department chairman.

2.2 The department chairman reviews Form B to assess instructional activities and then sends form to the subject matter specialist.

↓

2.3 The subject matter specialist tabulates the data reported on Form B in terms of its relationship with the sub-program element criteria. The relationship is termed the effectiveness ratio and is indicated by dividing actual student achievements (number of students achieving a desired level) by the desired achievements described in the sub-program element criteria. The tabulated data is entered on Form C and sent to the director of curriculum.

↓

2.4 The director of curriculum sends one copy of Form C to the building principal and one to the program review committee. If upon examining the data it is felt by either party that a problem exists, an historical treatment of the problem area may be requested from the director of curriculum.

↓

2.5 The director of curriculum reviews Forms C and compares program, sub-program, and sub-program element performance, unit and system wide. The data are used

to analyze objectives, criteria, and a variety of teaching-learning situations. If upon examination of the data the director of curriculum feels that a problem exists, he brings it to the attention of the chief school officer or the program review committee. This is accomplished by compiling for each sub-program element problem a record of performance over the past five years; the projected and actual cost for each of the past five years; present cost and performance data; and five-year projections for future cost and performance. This information is then entered on Form D and is sent to the chief school officer, and/or, the program review committee.

If Form D is sent to only one of the above parties, the other is sent a memorandum that describes the problem treated in detail on Form D. If upon receiving the memorandum, either party desires a copy of Form D; it may be requested from the director of curriculum.

2.6 Upon receiving information concerning a problem area one or both of the following takes place; action is recommended by the program review committee, or action concerning the problem is taken by the chief school officer.

3. (FEBRUARY)

3.1 The chief school officer requests the director of curriculum to prepare a summary of the cost and effectiveness of all instructional programs for the purpose of pre-budgetary review.

3.2 The director of curriculum completes Form F, entering program titles and numbers, desired system-wide achievement levels, actual achievement levels, projected total program cost, actual total program costs, the ratio of actual to desired achievement levels, and the ratio of actual to projected total program cost. This information is then sent to the chief school officer and the board of education for review.

Summary

Systems must monitor the extent to which their objectives are being met, so that this information may be used to alter system activities and imrpove performance.

The process of monitoring, devising alterations to the system, and introducing alterations is termed feedback.

The action of feedback is in itself a system and may be subdivided into three components; input, processor, and output. The input of a feedback system is data collected by a detector (one who compares desired results with achieved results and reports discrepancies). The data is processed by a selector (one who chooses a course of action designed to improve progress toward the general system's objectives). This course of action (output) is then introduced into the general system by an effector (one who is in a position to cause implementation).

The forms and procedures illustrated in this chapter have been designed to fulfill in part the need of the Western New York PPBS Project for a feedback system. During the development of these documents the primary focus has been to improve communication regarding instruction so that resources may be allocated in such a way that system-wide instructional program success is facilitated.

Decisions regarding programs should not be based solely upon past cost and effectiveness, but should also reflect projections of

these factors for future years. The following chapter concerns itself with techniques that may be utilized to project future program costs.

Footnotes, Chapter III

1. Richard A. Johnson et al. The Theory and Management of Systems (New York: McGraw-Hill Book Co., 1963), p. 76.

2. American Association of School Administrators, Administrative Technology and the School Executive (Washington, D.C.: American Association of School Administrators, 1969), p. 164.

3. Johnson, op. cit., p. 164.

4. American Association for the Advancement of Science, General Systems Theory and Education (California - American Assoc. for the Advancement of Science, 1965), p. 7.

5. Government Studies Center, P.P.B.S. Procedures Manual for School Districts, Version I, Model 2 (Pennsylvania: Fels Institute of Local and State Government, 1969), pp. 8-9.

CHAPTER IV

MULTI-YEAR COST PROJECTION TECHNIQUE

Rationale

In the past, traditional budgets have provided minimal and fragmentary information for planning and decision-making. These budgets were designed solely to provide a financial outlook for one year. With the evolution of PPBS, a new approach to budgeting on a multi-year basis was developed. In view of this, this chapter is devoted to developing cost forecasting techniques that specify the human and financial resources needed to attain program outputs over a five-year period. Multi-year cost projection, an integral part of a PPB system, allows educational decision-makers to see the cost implications of their program projections. The cost projection technique presented here deals specifically with deriving realistic program expenses and projecting them.

A review of cost forecasting literature indicated that the following variables must be considered in a technique that projects costs. These variables are:

1. Changes in the quantity and mix of student population in a school district.
2. Changes in programs in a school district.
3. Changes in the needs of a school district, as influenced by No. 1 and No. 2, above.
4. Changes in the costs of the needs of a school district due to: a) changes in the needs themselves, and
   b) the effects of inflation on costs.

Techniques for collecting the necessary data and computing student population projections are contained in the Planning Component Report of the Western New York PPBS Development Project, (1) and are dealt with by that agent, rather than here.

Programs and their changes are also specified by the Planning Component of the Western New York PPBS Development Project. Therefore, the cost forecast technique specified here will concern itself only with the needs of the school district and with the changing costs of these needs. It is necessary that information on changes in student population and information about programs and program changes be available to program managers, and that further cost projection be made in light of this information.

It is suggested that the needs of any particular program, as well as the total needs of a school system can be classified in the following categories:

1. Personnel.
2. Equipment.
3. Supplies.
4. Buildings and facilities.
5. Contracted services.
6. Service unit expenses.
7. Other expenses (as defined by the glossary).

These categories encourage the program manager to think in terms of programs which, in turn, aid in projection.

Needs are listed first as "Items" (personnel and materials) by the program manager on the Needs Projection Form, p. 109. These needs are the items the program manager requires to implement his program for each year of the five-year period. It should be noted that the Needs Projection Form does not consider dollar amounts, since it is an item-oriented listing.

After all the needs for a particular program are listed for the five-year period, the program manager then assigns dollar values to all the items on the Needs Projection Form by listing them on the Multi-Year Program Cost Form. Assignment of these dollar values is done by consulting current price listings and salary schedules in use in the school district at that time. The Multi-Year Program Cost Form, when completed for the five-year period with current prices, is Budget I, a current dollars budget for the five-year span.

The next step is to project Budget I on the basis of probable changes in cost. To do this it is recommended that data on cost changes be secured for the five-year period immediately preceding the current year. For this, one refers to the Data Source Table which provides an itemized list for particular budget categories. Data for determining inflation are available at the present time only in traditional line-item categories. These are:

1. Administration.
2. Instruction.
3. Attendance services.
4. Health services.
5. Pupil transportation services.
6. Operation of the plant.
7. Maintenance of the plant.
8. Fixed charges.
9. Food services.
10. Student body activities.
11. Community services.
12. Capital outlay.
13. Payment between school districts. (2)
14. Debt Service.

Therefore, in order to project Budget I on probable cost change basis, it is necessary to convert the seven budget categories in Budget I to the fourteen line-item categories listed above. This conversion is facilitated by referring to the definitions of these categories as listed in the glossary. Also, an illustrative table showing the interrelationships between the categories of Budget I and the line-item categories listed above is shown in Fig. 25. p. 89. Budget I, when changed to line-item categories, and projected on the basis of inflation, becomes Budget II, the completely projected budget for the five-year period.

In order to compile Budget II, we need a means of accounting for inflation. This is achieved by using the following formula:

$$E_x \cdot PI_y = E_y$$

where:

E_x = the expense in current dollars
PI_y = the index of projection

E_y = changed expense
x = current year
y = any future year specified.

The index of projection, PI_y, is the factor which accounts for inflation. This index is based on the inflationary trend in a particular expense area, and is derived by analyzing data in an expense area for the five years immediately preceding the current year. The trend of change for these five years is first graphed and examined (see Fig. 27, p. 91). Then using the first five years as a basis, a prediction is made for the next five years, and this trend is graphed. This trend, which is derived mathematically (as per Job Outline CP-5, p. 104), is the average trend of change. In order to allow the program manager more latitude in making predictions, two other trends are also graphed. One is the "Minimum Change Trend", which is a graph of a trend showing the least amount of change indicated in the past five years. The other is the "Maximum Change Trend", which is a graph of a trend showing the greatest degree of change indicated within the past five years. The index of change is found from the average predicted change trend. Job Outline CP-5 gives complete instructions on how to find the change trends and how to compute the index of projection. An illustrative model of the graph mentioned above, with inflationary trends illustrated and the index of projection indicated, is shown in Figs. 27-31 on pp. 91-95. In order to project an expense on the basis of inflation, use the formula $E_x \cdot PI_y = E_y$.

By multiplying the expense stated in current dollars (E_x) by the index of projection for a particular year (PI_y), E_y is obtained. This projection of expense for the specified year, taking into account the effects of inflation.

Any of the expenses in the fourteen line-item categories mentioned above can be projected on the basis of inflation by using the inflationary projection formula stated above. For each category of expense the data reference table lists a source for data to be used in deriving the index of projection (see Fig. 26, p. 90). By projecting each of the fourteen categories for each year in the projection period, Budget II can be derived. Budget II as such, represents a complete five-year budget which has been adjusted to accommodate the effects of the variables which influence the costs of education.

If a program manager desires an overview indicating how the total cost of a program would be changed by inflation, he can use the projection formula mentioned above, using an index of projection based on the total educational inflationary trend. Such a total inflationary trend is listed in School Management, January editions. (3) (See Job Outline CP-7.)

In summary, this chapter has presented some of the reasons for developing a cost forecasting technique, the variables involved in such a technique and how these variables were considered. The actual technique of cost forecasting has been discussed, and examples of conversion charts and data for projections have been presented. The flowscript procedures and the job outlines that follow give specific instructions on how to cost out a program and how to project the program costs for five years. Terms that may not be self-explanatory are defined in the glossary.

Interrelationships of Program Budget and Line-Item Budget Categories

	Pers.	Equip.	Supp.	Bldgs.&Facil.	Contr. Serv.	Serv. Unit Exp.	Other Exp.
Administration	X	X	X		X	X	X
Instruction	X	X	X		X	X	X
Attendance Serv.	X	X	X		X	X	X
Health Serv.	X	X	X		X	X	X
Pupil Trans.	X	X	X		X	X	X
Operation of Plant	X	X	X	X	X	X	X
Maint. of Plant	X	X	X	X	X	X	X
Fixed Charges						X	
Food Serv.	X	X	X		X	X	X
Student Body Act.	X	X	X		X	X	X
Community Serv.	X	X	X		X	X	X
Capital Outlay		X		X			
Debt Service							X
Payment Btn. Sch. Dist.							X

Fig. 25 - Interrelationships of program budget and line-item budget categories

This table lists the sources of data recommended for use in projections. The data are listed in recommended order, that is, the sources at the top of the lists are preferred over sources further down the lists.

FOR ALL BUDGET ITEMS EXCLUSIVE OF SALARY IN ANY AREAS

1. School Management, January editions (at least for the past five years).
2. Projections of Educational Statistics.
3. Wholesale Price Index, Statistical Abstract Yearbook, U. S. Office of Budget.

FOR ALL SALARY PROJECTIONS

1. Use local salary schedule for whatever area salary projections are made in.
2. School Management.

Fig. 26 - Data source table

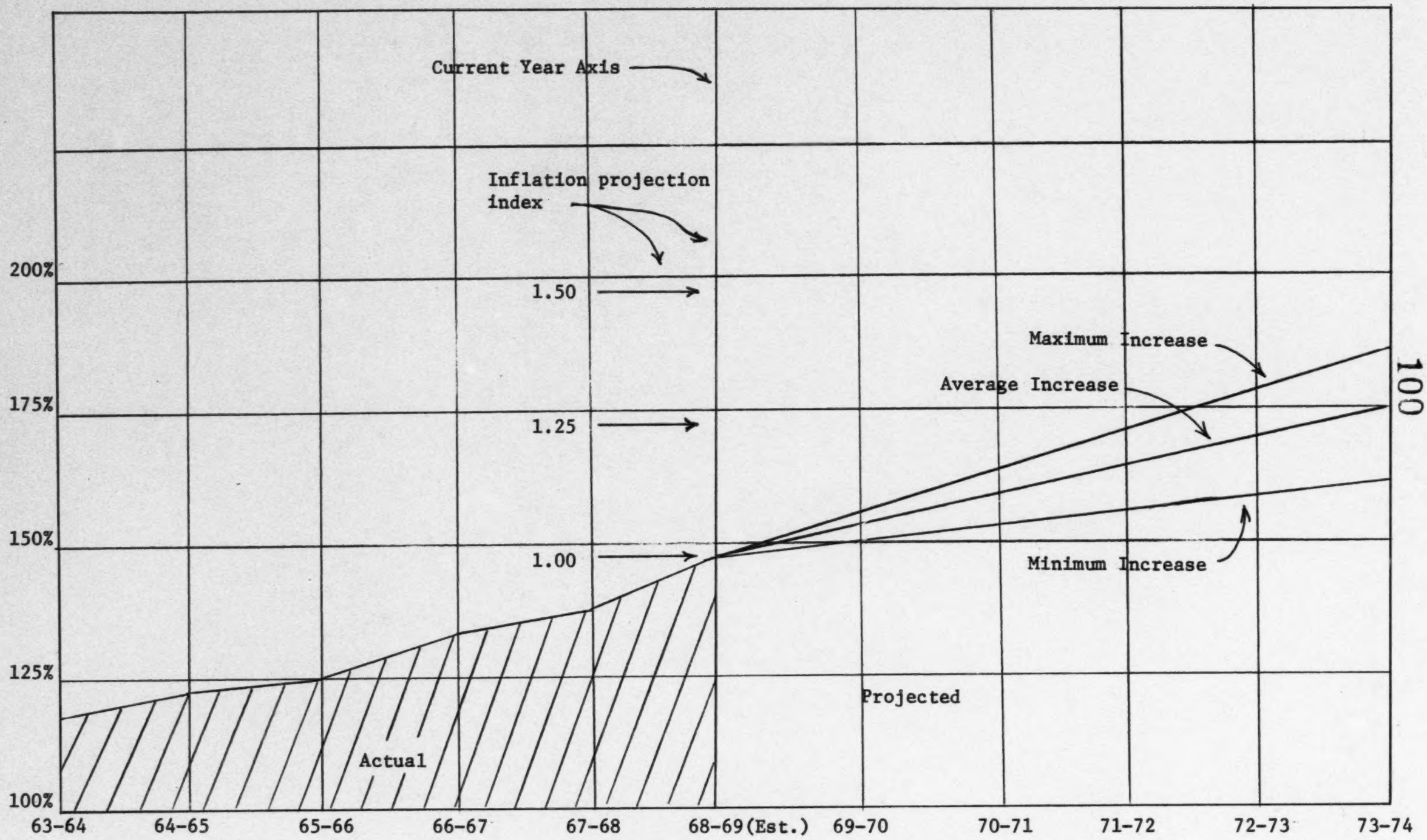

Fig. 27 - Actual and projected educational inflation

Adapted from: School Management, XIV, No.1, p. 39.

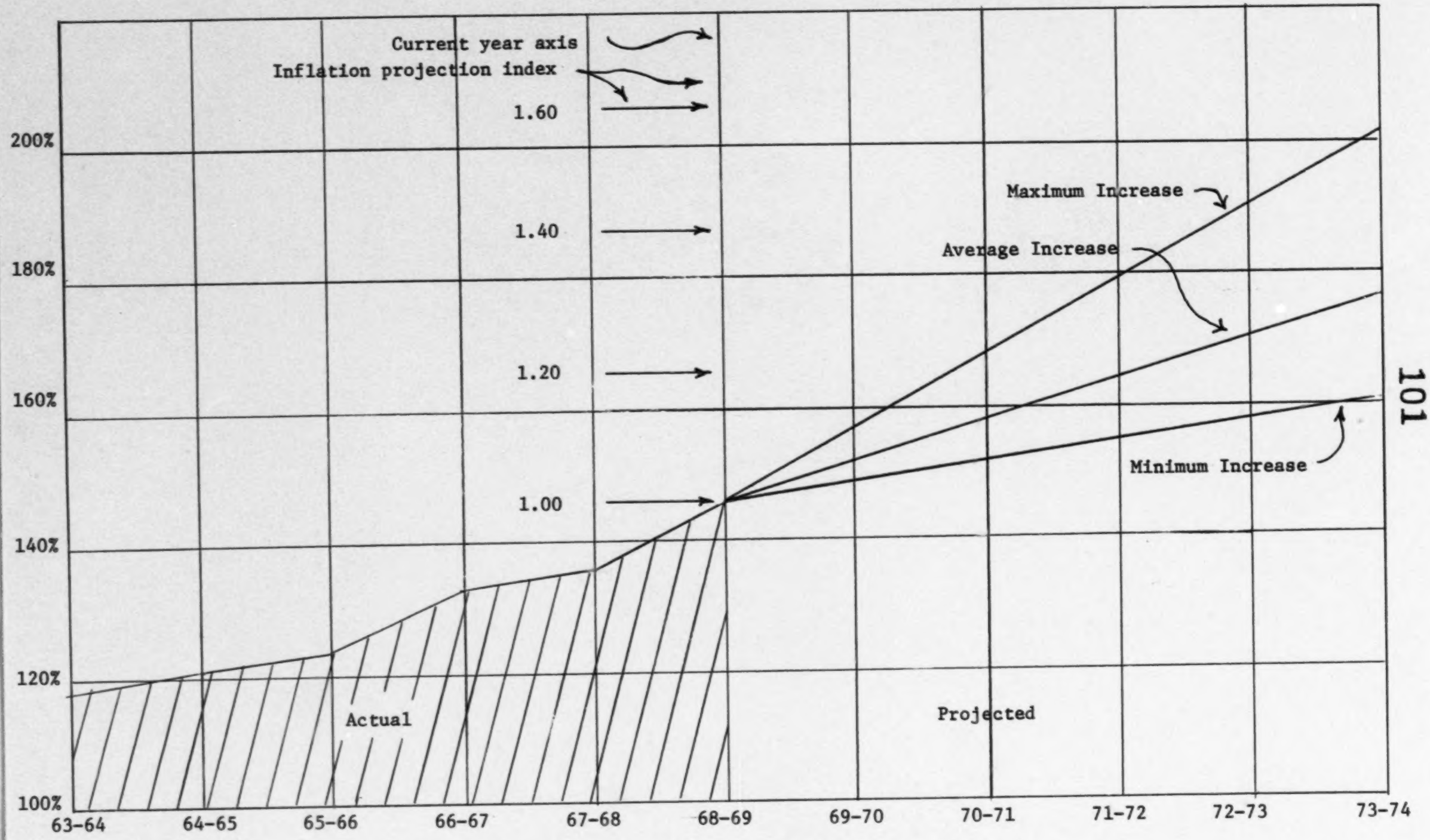

Fig. 28 - Actual and projected fixed charges inflation

Adapted from: School Management, XIV, No. 1, p. 70.

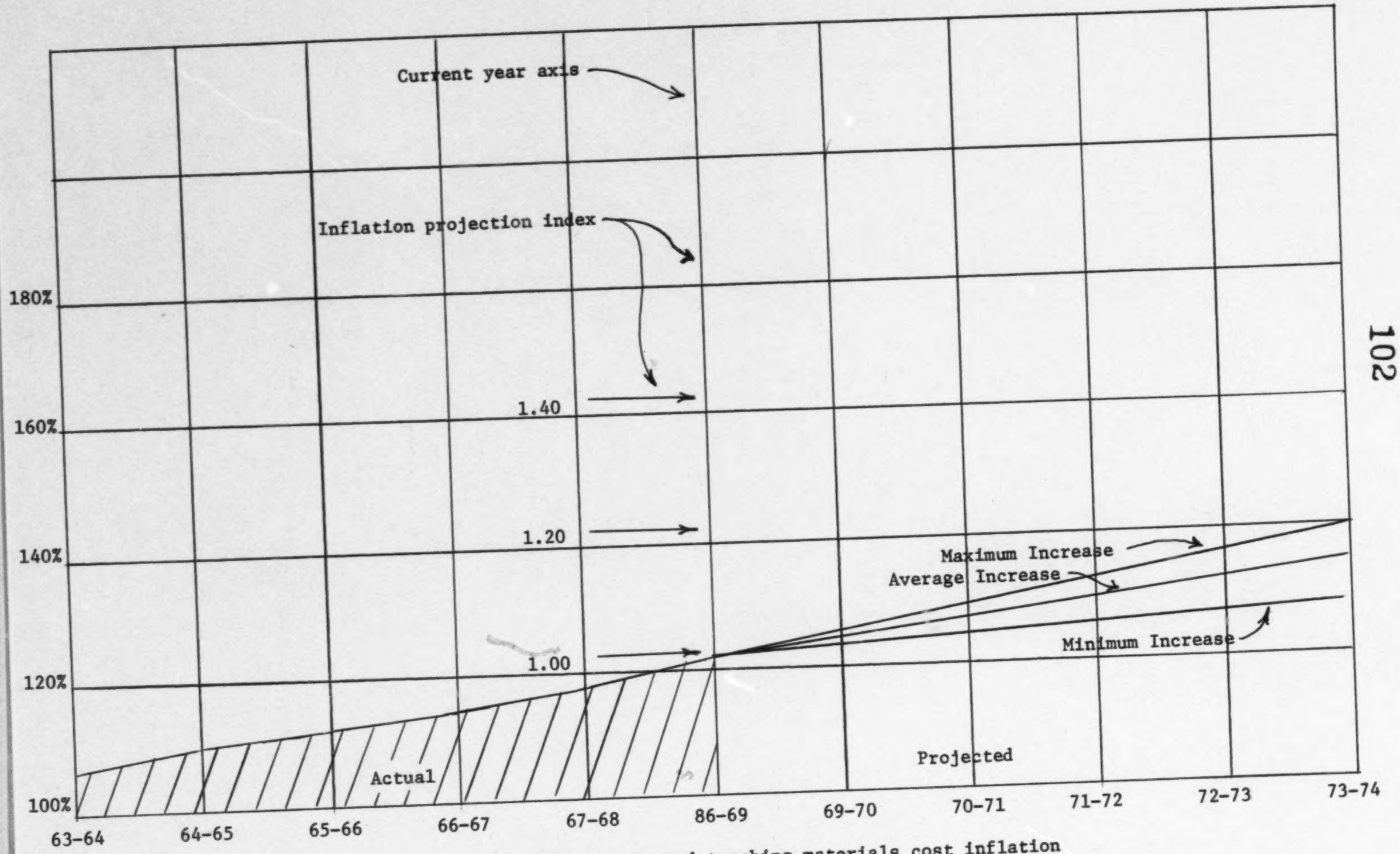

Fig. 29 - Actual and projected teaching materials cost inflation

Adapted from: School Management, XIV, No. 1, p. 49.

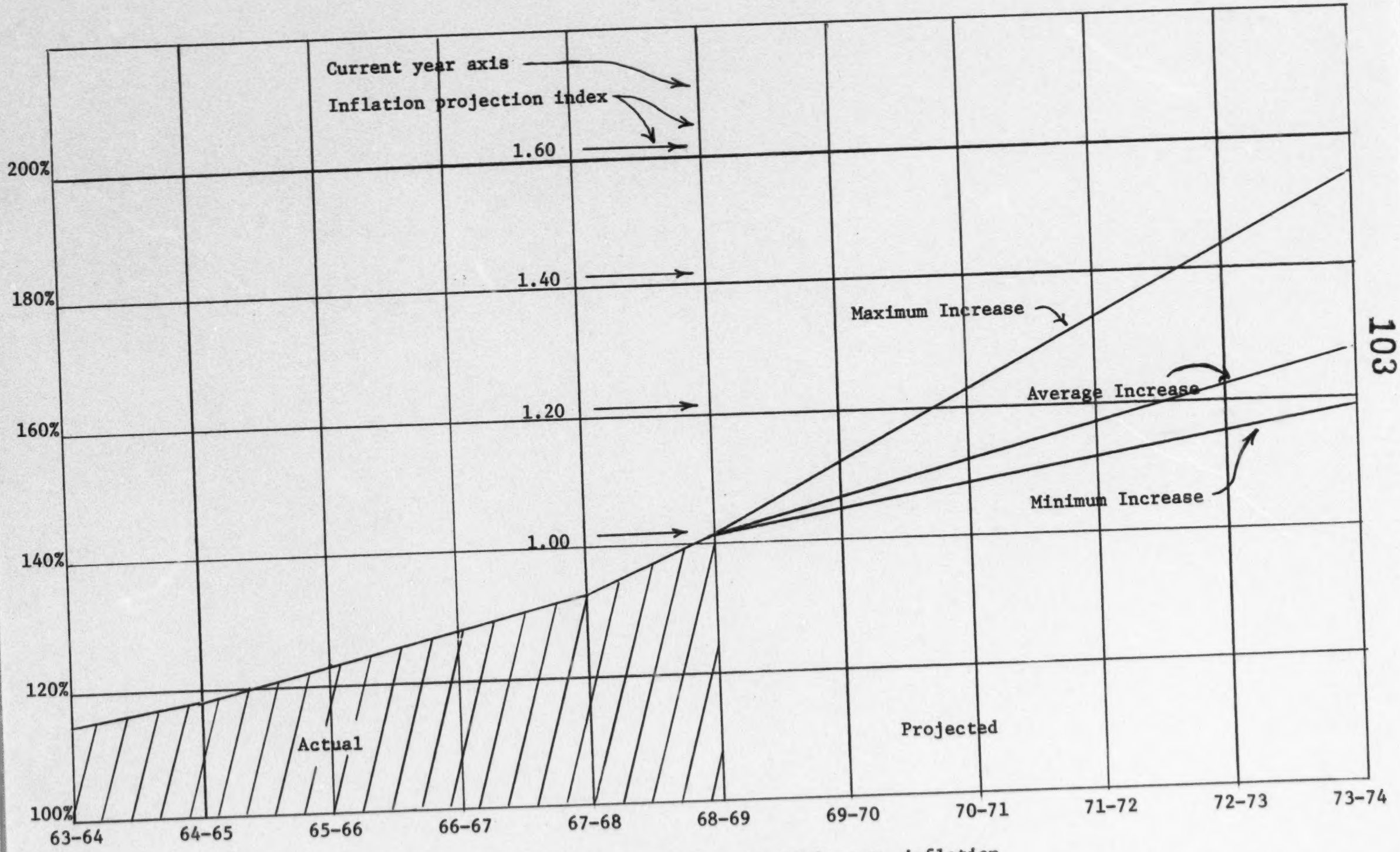

Fig. 30 - Actual and projected health costs inflation

Adapted from: School Management, XIV, No. 1, p. 71.

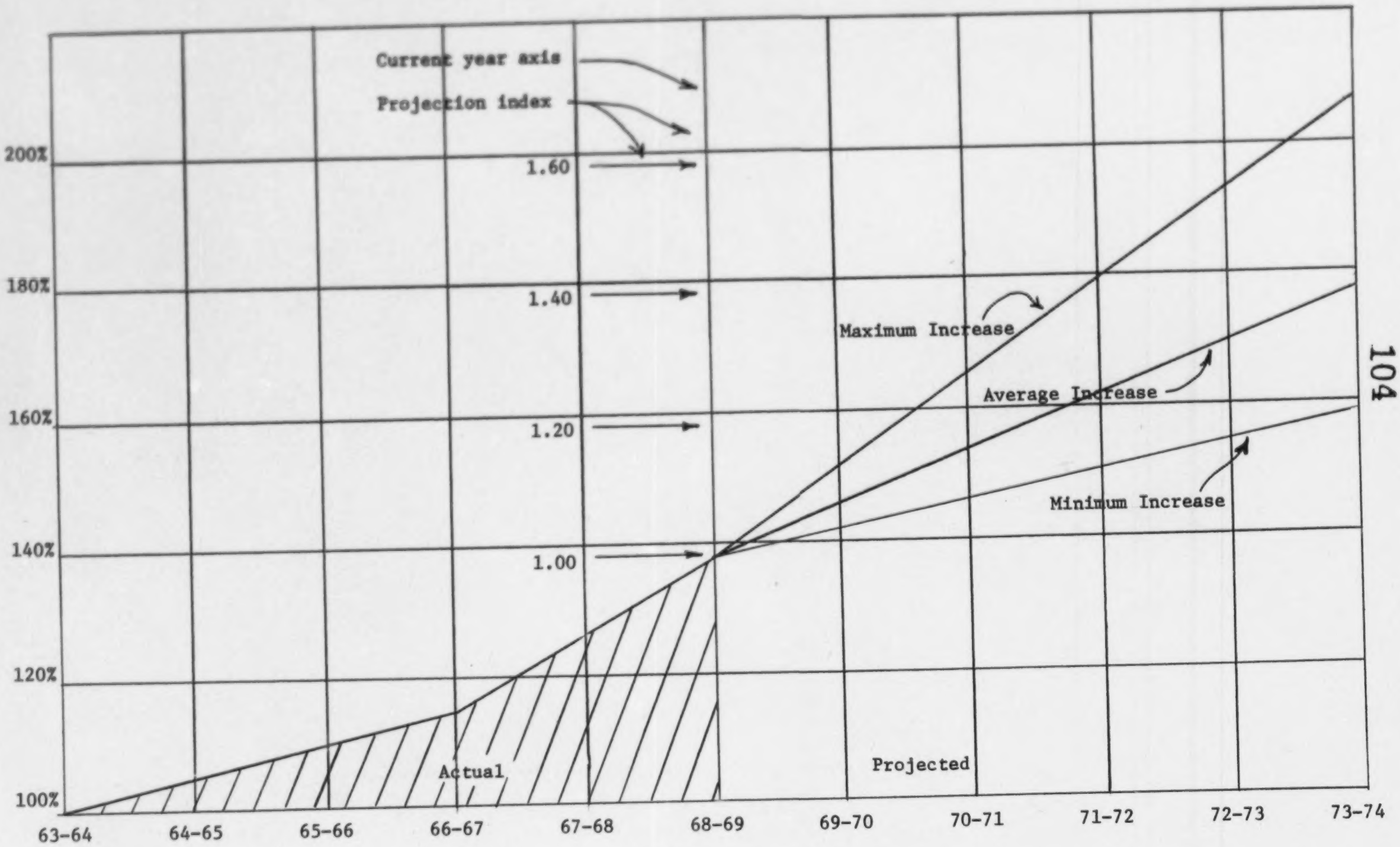

Fig. 31 - Actual and projected teacher salary costs

Adapted from: NEA Reasearch Bulletin, 1969.

COST FORECAST COMMITTEE	PROCEDURE	DATE:	PROCEDURE #1
		CANCELS NONE	

SUBJECT: COSTING OUT A PROGRAM AND PROJECTING THE COST OF A PROGRAM FOR FIVE YEARS.

RESPONSIBILITY:	ACTION:
Program Manager	1) Obtains pupil population projections and designated program for five-year period from Planning Component and Programming Component respectively.
	2) Determines what his particular program needs are on a yearly basis, for five years in order to properly implement his program for five years.
	3) Lists the program needs for each year of the five year period on the Needs Projection Form.
	4) Obtains current dollar value of each item on the Needs Projection Form from salary schedules and price catalogues in current use in the school district, and lists the dollar amounts found, on the Budget I, (Multi-Year Program Cost Form) document. (This action as per Job Outline #CP-1, CP-2, CP-3.)
	4.1) If the program is very large, or the quantity of the program needs is very large, the Program Manager should seek aid from the Business Office in deriving the costs of program needs.
	5) Converts Budget I to Current Dollars Line Item Cost Form as per Job Outline #CP-4.
Business Office Clerk	6) Constructs Data Projection Charts showing projected inflation for all expense categories on the Current Dollars Line-Item Cost Form, as per Job Outline #CP-5.

Program Manager

7) Secures from Business Office Clerk, copies of all Data Projection Charts for the expense categories he uses on the Current Dollars Line-Item Cost Form for his program.

8) Projects items of expense listed on the Current Dollars Line-Item Cost Form that he has completed for his program. (This action as per Job Outline #CP-6.) Thus constructing Budget II.

9) Constructs Inflated Budget I by listing all inflated dollar items in each of the fourteen line-item categories in appropriate places on Multi-Year Program Cost Form, as per definitions of categories found in flossary. (This action is an exact reversal of Job Outline CP-4. This results in a completely inflated Program Budget for five year period.)

10) <u>IF DESIRED</u>, a "quick picture" of the total inflated program cost can be found as per Job Outline #CP-7.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-1

Subject: Deriving dollar amounts for items on NEEDS PROJECTION FORM and placing these on MULTI-YEAR COST FORM.

RESPONSIBILITY:

Program Manager

ACTION:

1) Takes all items in the personnel category and divides into groups by function. (i.e. teacher, teacher aide, clerk.)

2) Computes average salary for each group in #1 above, according to Job Outline #CP-2.

3) Takes salary totals of each group and subtracts turnover compensation factor as derived in Job Outline #CP-3.

4) Enters new totals from #3 above in personnel section on Multi-Year Program Cost Form.

5) Performs steps #1, #2, #3, #4, for each year in five year period, being careful to change base salaries each year according to standard yearly increments.

6) Lists dollar value of item in categories of Equipment, Supplies, Buildings and Facilities, Contracted Services, and Service Unit Expenses, as given in current trade journals, on Multi-Year Program Cost Form in the same respective categories.

7) Totals each year on Multi-Year Program Cost Form.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-2

Subject: Computing Average Salary Figures.

RESPONSIBILITY:

Program Manager

ACTION:

1) Segregates personnel category in Needs Projection Form into function groups, (i.e. clerk, teacher aide.) (refer #1, Job Outline #CP-1)

2) Lists all salaries for all members in a particular function group.

3) Totals all salaries for all members in a particular group.

4) Divides the total computed in #3 above, by the total number of salaries in that group.

5) Performs actions #1,#2, #3, #4, for all functional groups to personnel category.

6) Uses these totals as the average salaries in each particular functional group.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-3

Subject: Computing average turnover correction factor.

RESPONSIBILITY:

Program Manager

ACTION:

1) Segregates personnel category on Needs Projection Form into function groups, (i.e. teacher, teacher aide, clerk.) (refer to #1, Job Outline CP-1)

2) Totals the number of persons in each function group.

3) Totals the number of persons leaving each function group for the year just previous to the current year.

4) Divides the total number of persons leaving a function group in that year by the total number of persons in that function group.

5) Multiplies the figure derived in #4 above, by 100 to get a percent figure. This is the percent of turnover per year. (In this case it is the percent of turnover for the year previous to the current year.)

6) Performs actions #2, #3, #4, #5 above for each year of the five previous years, to the current year. (The first previous year is done in steps #1 to #5.)

7) Lists the percent of turnover for the five years stated, adds these percents, and divides by 5. The result is the average rate of turnover for five years.

8) Multiplies the average turnover rate from #7 above for each function group times the number of persons in the particular function group to get the average turnover.

9) Takes the average turnover derived in #8 above and multiplies this times the average salary and the base salary for each year in the projection period, for each function group.

10) Subtracts the base salary amounts found in #9 above, from the average salary amounts found in #9 above, for each year indicated.

11) The result of the subtraction in #10 above, is the annual turnover correction factor.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-4

Subject: Converting Budget I (Multi-Year Program Cost Form) to Current Dollars Line-Item Cost Form.

RESPONSIBILITY:

Program Manager

ACTION:

1) Lists all items in personnel category of Budget I in appropriate places in line item categories, as per definitions of the categories as found in the glossary. (Note: all items in personnel category on Budget I are divided into function groups in Job Outline #CP-1, and in order to aid in projections, they should be listed in the same function grouping in their respective categories on the Current Dollars Line-Item Cost Form.)

2) Lists all items in equipment category on Budget I in appropriate places in the line item categories on the Current Dollars Line-Item Cost Form, as per definitions found in glossary.

3) Lists all items of the supplies category on Budget I in appropriate places in the line item categories on the Current Dollars Line-Item Cost Form, as per definitions as found in the glossary.

4) Lists all items of the buildings and facilities category on Budget I in appropriate places in the line item categories on the Current Dollars Line-Item Cost Form, as per definitions found in glossary.

5) Lists all items of the contracted services category on Budget I in appropriate places in the line item categories on the Current Dollars Line-Item Cost Form, as per definitions found in glossary.

6) Lists all items of the service unit expenses category on Budget I in appropriate places in the line item categories on the Current Dollars Line-Item Cost Form, as per definitions as found in the glossary.

7) Lists all items of the other expenses category on Budget I in the appropriate places in the line item categories on the Current Dollars Line-Item Expense Form, as per definitions found in the glossary.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-5

Subject: Constructing data projection chart and deriving projection index (Replication of techniques illustrated in figures 27, 28, 29, 30, and 31.)

RESPONSIBILITY:

Business Office Clerk

ACTION:

1) Consults data reference table (Fig. 27) for source of data in expense category to be projected.

2) Assembles data for five-year period immediately preceding current year.

3) Constructs chart. (see Figs. 27,28, 29, 30, 31)
   - 3.1 Lists percentage of inflation of fixed dollar costs on vertical axis.
   - 3.21 Indicates years on horizontal axis.
   - 3.22 Indicates current year vertical axis.
   - 3.3 Plots expenses for each year of five year period preceding current year.
   - 3.4 Calculates average difference between year one and year five by finding the difference between year one and year five and dividing by five.
   - 3.5 Projects average increase to year five of projection period.
   - 3.6 Finds basis of minimum increase projection by calculating which of the five preceding years shows the minimum increase.
   - 3.7 Projects minimum increase to year five of projection period.
   - 3.8 Finds basis of maximum increase projection by calculating which of the five preceding years shows the maximum increase.

3.91 Projects maximum increase to year five of projection period.

3.92 Draws a vertical line upward from the current year point on year axis and labels this vertical line "projection index axis".

3.93 Designates point where "average projection line" crosses "projection index axis" at index point of 1.00.

3.94 Using same measurement scale as used on inflation percentage axis, measures off projection index axis designating points above index point of 1.00 as increasing and points below 1.00 as decreasing.

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-6

Subject: Projecting the items of expense listed on Current Dollars Line-Item Cost Form.

RESPONSIBILITY:

Program Manager

ACTION:

1) Selects the expenses listed in the personnel subcategory of the administration category and divides into function groups.

2) Obtains projection indices from data projection chart for each function group, for each year in the projection period.

3) Multiplies each expense from #1 above, times projection indices for each year in projection period.

4) Lists projected expenses derived in #3 above, on Budget II form in appropriate places.

5) Selects personnel subcategory of the instruction category and divides into function groups.

6) Obtains projection indices from data projection charts for each function group, for each year in projected period.

7) Multiplies expenses from #5 above, times projection indices from #6 above, for each year in projection period.

8) Lists "projected" expenses derived in #8 above, on Budget II form in appropriate places.

9) Takes categories: Administration, sub-category; other items; Instruction, sub-category; other items; Attendance service; Health Services; Pupil Transportation Services; Operation of Plant; Maintenance of Plant; Fixed Charges; Food Services; Student Body Activities; Capital Outlay; Community Services; and Payment Between School Districts. Working with each category separately, obtains projection index from data projection charts for each respective category.

10) Multiplies each category in #9 above, times projection index for each category, also found in #9 above.

11) Lists projected expenses derived in #10 above, on Budget II form, in appropriate places.

12) Places all items from debt service category on Budget II form as they appear on Current Dollars Line Item Cost form. (They are in themselves a projection.)

Cost Forecast Committee	Job Outline	Date: Cancels None	Job Outline CP-7

Subject: Finding "quick picture" total program cost.
THIS IS AN OPTIONAL ACTION PROPOSED FOR THE CONVENIENCE OF THE PROGRAM MANAGER.

RESPONSIBILITY:

Program Manager

ACTION:

1) Takes total from Budget I, (Multi-Year Program Cost Form)

2) Calculates projection index for Total Educational Inflation, as per Job Outline #CP-5, by using data for total educational inflation.

3) Multiplies total in #1 above, times indices found in #2 above, this gives the inflated total program cost.

PROGRAM Language Arts

DISTRICT Pleasantville

DATE 3/4/70

PERSON COMPLETING A. Jones

INSTRUCTIONS: This form is to be completed by the Program Manager. On this form should be listed all the needs necessary to implement the named program on a yearly basis for the next five years. Note: All items in Personnel category should be placed in function groups (see glossary for definition).

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
PERSONNEL					
Administrative					
Instructional					
a)Supervisory	1	1	1	1	1
b)Teaching	3	4	4	4	5
c)Teacher Aid	4	4	4	4	4
Plant Operation					

Fig. 32 - Needs projection form

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
Equipment Audio Visual Furniture Office Equip.	1 Phonograph	1 16 mm Proj.	1 Typewriter	Tape Recorder	
Supplies Books Paper	30 Texts 20 Reams Ditto 2 Reams Manilla	20 Reams Ditto 2 Reams Manilla	20 Reams Ditto 2 Reams Manilla	20 Reams Ditto 2 Reams Manilla	30 Texts 20 Reams Ditto 2 Reams Manilla
Buildings & Facilities					

Fig. 32 - Needs projection form, continued

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
Contracted Services Reading Machine Servicing	1	1	1	1	1
Service Unit Expenses Teacher Retirement Supv. Teacher Aide	 1 3 4	 1 4 4	 1 4 4	 1 4 4	 1 5 4
Other Program Expense					

Fig. 32 - Needs projection form, continued

Program Language Arts

District Pleasantville

Date 3/3/70

Person Completing A. Jones

INSTRUCTIONS: This form is to be completed by the program manager. On this form should be listed the current dollar values for all items listed on the needs projection form. Note:All items in personnel category should be placed in function groups.

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
PERSONNEL					
Administrative					
Instructional					
a) Supervisory	$ 10,000	$ 10,300	$ 10,600	$ 10,900	$ 11,200
b) Teaching	24,000	32,900	33,800	34,700	44,800
c) Teacher Aid	16,000	16,400	16,800	17,200	17,600
Plant Operation					

Fig. 33 - Budget I, multi-year program cost form

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
Equipment Audio Visual Furniture Office Equipment	$300	$450	$400	$300	
Supplies Books Paper	120 24	24	24	24	120 24
Buildings and Facilities					

Fig. 33 - Budget I, multi-year program cost form, continued

Object of Expense	Year 1	Year 2	Year 3	Year 4	Year 5
Contracted Services					
Reading Machine Service	40	40	40	40	40
Service Unit Expense					
Teacher Retirement					
Supv.	2,000	2,100	2,200	2,300	2,400
Teachers	3,000	4,300	4,700	5,100	6,400
Aids	400	440	480	520	560
Other Program Expense					
Totals	$55,884	$66,950	$69,044	$71,084	$83,144

Fig. 33 - Budget I, multi-year program cost form, continued

PROGRAM Language Arts

DISTRICT Pleasantville

DATE 3/3/70

PERSON COMPLETING A. Jones

INSTRUCTIONS: This form is to be filled out by the program manager. All the expense categories on Budget I are to be converted to the line item expense categories listed here by way of using the line item category definitions found in the glossary.

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Administration					
Instruction					
Salaries:					
Supv.	$10,000	$10,300	$10,600	$10,900	$11,200
Teachers	24,000	32,900	33,800	34,700	44,800
Aids	16,000	16,400	16,800	17,200	17,600
Other:	$ 5,884	$ 7,354	$ 7,844	$ 8,284	$ 9,544

Fig. 34 - Current dollars line item cost form

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Attendance Services					
Health Services					
Pupil Transportation					

Fig. 34 - Current dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Operation of Plant					
Maintenance of Plant					
Fixed Charges					

Fig. 34 - Current dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Food Services					
Student Body Activities					
Community Services					

Fig. 34 - Current dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Capital Outlay					
Debt Service					
Payment Between School Districts					
Totals	$55,884	$66,950	$69,044	$71,084	$83,144

Fig. 34 - Current dollar line item cost form, continued

PROGRAM Language Arts

DISTRICT Pleasantville

DATE 3/3/70

PERSON COMPLETING A. Jones

INSTRUCTIONS: This form is to be filled in by the program manager. All the expenses listed on the Current Dollars Line Item Cost Form should be placed on this form after they have been properly projected.

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Administration					
Instruction Salaries:					
Supv.	$10,500	$11,340	$11,922	$12,833	$13,790
Teacher	25,200	35,805	38,540	41,412	54,008
Aids	16,800	18,060	19,383	20,772	22,231
Other	6,119	7,893	8,718	9,524	11,215

Fig. 35 - Budget II, projected dollars line item cost form

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Attendance Services					
Health Services					
Pupil Transportation					

Fig. 35 - Budget II, projected dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Operation of Plant					
Maintenance of Plant					
Fixed Charges					

Fig. 35 - Budget II, projected dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Food Services					
Student Body Activities					
Community Services					

Fig. 35 - Budget II, projected dollars line item cost form, continued

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
Capital Outlay					
Debt Service					
Payment Between School Districts					
Totals	$58,619	$73,098	$78,563	$84,541	$101,244

Fig. 35 - Budget II, projected dollars line item cost form, continued

Footnotes, Chapter IV

1. Stephen J. Knezevich and John Fowlkes, School Business Management of Local School Systems (New York: Harper, 1960), p. 127.

2. Western New York PPBS Development Project, Planning Component Report (Buffalo, New York: The Council, 1970).

3. School Management, annual January Editions, 1965-1970.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE STUDY

Conclusions

The comments listed below represent the study group's suggestions for school systems about to undertake the developemnt of a PPB system. These suggestions are the result of the group's own experiences in developing four components of a PPB system.

Designing a PPB System

1. A PPB system cannot be designed in a vacuum. Once a district in which the system is to be implemented has been identified, all further disign should be enacted with the specific needs of the district in mind.
2. Designing a PPB system will be facilitated if it incorporates the help of all persons affected by the PPB system. This should include students, professional and non-professional staff, and community, as well as the administrative staff.
3. At no time should any person involved in this system develop the feeling that PPBS is a means of "checking up" on him. This is especially important when working with the classroom teacher. It could easily be misinterpreted that some of the feedback forms designed by the study group are to be utilized for such a purpose. To prevent such misunderstanding, the school district involved should spend appropriate time and energy explaining how this fiscal decision-making system will in the long run benefit the individual student in the classroom.

4. Schools should maintain public relations programs to obtain support for the implementation of PPBS.
5. Sufficient lead time should be allocated in pre-planning a PPB system to insure the development of a logical sequence of events. The time necessary will depend upon the extent to which the existing organizational structure must be modified.
6. In-service programs must be offered to all school district personnel to acquaint them with the theoretical basis for PPBS.
7. Early in the design of a PPB system, agreement must be reached on the definition of terminology. It has been the group's experience that if a variety of new titles is applied to people in a school system, confusion will result.
8. The Western New York School Development Council, due to the number of school districts with which it is affiliated, should be utilized as a central clearing house for disseminating information regarding PPBS. This can easily be accomplished with the reservoir of knowledge regarding existing PPBS structures presently on hand at the Council.

Developing A Program Structure

The following procedures, if followed in the order indicated, will aid the development of a program structure:

1. Review existing PPBS programs with special attention to programs of school districts of size comparable to the district under study.

2. Examine closely those existing PPBS programs which contain the academic and physical characteristics resembling the district under study.
3. After a thorough examination of the district under study, isolate all the existing school activities and place them into logical groupings. Guidelines to be used in the establishment of a logical grouping are:

   a. The grouping must include a set of continuing activities.
   b. Some segment of the present school organization must have the responsibility for each activity.
   c. The activity must have a relationship to the objectives of the district.

   The study group suggests that an effective mechanism for accomplishing No. 3 is to give teachers released time on a periodic basis for the purpose of listing their actual teaching activities in groups that relate to the system's educational objectives.
4. Each major grouping should be labeled as a program category with a title that suggests the activities incorporated in that category (e.g. instructional, instructional support, general support, policy and direction, etc.).
5. Construct a model which depicts the entire district, illustrating levels of programs and sub-programs.
6. Any activity which does not meet the guidelines established in procedure 3c, above, should be labeled "project."

Developing Program Criteria

After utilizing the procedures below, the study group suggests that they be used by others interested in developing program criteria.

1. Review materials pertinent to an understanding of the nature and development of:
   a. Instructional objectives.
   b. Measurement of educational objectives.
2. Review existing literature on program criteria:
   a. Present PPB system.
   b. Local, state, and regional evaluative criteria.
   c. Other sources (e.g., books, journals, etc.).
3. Examine and evaluate existing objectives of the school system:
   a. Accept or reject on the basis of being realistic and operational.
   b. Revise or develop acceptable objectives.
4. Write program criteria:
   a. Use local, state and national norms as possible measurable criteria.
   b. Establish new or improved criteria based upon objectives.
5. Maintain a continuing research committee to keep criteria current.

Developing Feedback Mechanisms

In the development of feedback mechanisms, the following procedures should be utilized in the order indicated.

1. Review literature on cybernetics with special attention to feedback.
2. Examine existing PPB systems to reveal feedback mechanisms that may be useful in the present situation.

3. Establish what types of information are needed by personnel at various levels in the program structure.
4. Establish the necessary forms to collect and disseminate the needed information.
5. Establish a yearly timetable for submission of the feedback forms developed above.

Development of Multi-Year Cost Projection Techniques

In the development of multi-year cost projection techniques, the following procedures should be utilized in the order indicated.

1. Isolate budget areas for each program:
   a. personnel
   b. equipment
   c. supplies
   d. buildings and facilities
   e. contracted services
   f. service unit expenses
   g. other expenses.
2. Review existing cost forecasting literature and select those techniques most applicable to the tasks at hand.
3. Modify the selected techniques to suit the particular school system involved.

Implementing PPBS

The following suggestions should be followed in order to facilitate the implementation of PPBS.

1. PPB procedures should be incorporated gradually due to their complexity and pervasiveness.
2. Personnel at all levels must be involved in in-service programs designed to acquaint them with new emphases, procedures, and terminology.

3. Due to the large volume of data that must be processed and disseminated to effectively employ a PPB system, it is suggested that electronic data processing be incorporated wherever possible.

RECOMMENDATIONS FOR FUTURE STUDY

Evaluation

As in any new implementation, a program of study should be conducted to determine what benefits the school system is deriving from PPBS.

Data Bank

A data bank should be developed which includes extensive qualitative and quantitative information regarding educational objectives, attainment, and cost, (see 3 under Implementing PPBS).

In-Service Education

Techniques for acquainting new personnel in a system with PPBS structure and operation must be developed.

Annotated Bibliography

In reviewing literature, the study group realized that information resources on the subject would be extremely limited. The following is the identification and summary of relevant literature.

AASA Commission on Administrative Technology. Administrative Technology and the School Executive. Washington, D.C.: American Association of School Administrators, 1969.

School administrators have discovered that traditional approaches to problem solving and decision-making often fall short of satisfying new demands in the school. Technology is concerned with the generation of a set of systematic techniques and organized knowledge applicable to the practical tasks of mankind. Many of the data forms were useful in preparing projection techniques and forms. The definition of feedback was greatly simplified by this book.

Adrian, W. Budget Guide Newport-Mesa Unified School District. Newport-Mesa, Rhode Island: Newport-Mesa School District, (2) 1967-1968, p. 46; 1968-1969, p. 60.

An accumulation of data by which the actual budget is determined was presented in this budget guide. It explained and identified budgeting principles, regulations, formulas and appropriations. It also included such things as income estimates, property tax computation and three cost comparison areas.

Alioto, Robert F., and Jungherr, J. A. "Using PPBS to Overcome Taxpayer's Resistance," Phi Delta Kappa. LI:3 November, 1969, pp. 130-141.

Mr. Alioto's article had a good description of "Program Analysis Memorandum." In evaluating the design for some of the critical issues this article proved to be very helpful.

American Association for the Advancement of Science. General Systems Theory and Education at the Eleventh Annual General Meeting of the Society for General Systems Research. Berkeley, California, 1965.

Feedback and the thorough processes of decision making were described in this paper. These ideas and terms were used by the study group in the formation of their feedback model.

Bauer, Rugdy J. "Preparation, Justification, Assure Adequate Budget," American School Board Journal, 154:4 (April, 1966).

Bauer recommended that maintenance in schools should be planned on a long-range scale for capital expenditure. He felt that at the end of each year operations and capital for the current fiscal year should be reviewed and the coming five fiscal years should be set up.

Beer, Stafford. Management Science. Garden City, New York: Doubleday and Company, Inc., 1968.

Beer attempted to present occasions for, and achievements of the scientific approach to management problems. Particular attention should be given to the area dealing with the measurement of production.

Bloom, Benjamin S. Taxonomy of Education Objectives. New York: David McKay, Co., Inc., 1956.

The author has devised a classification system for educational objectives in the cognitive domain. Objectives in this domain deal with recall or recognition of knowledge. This book is an excellent resource for understanding, writing and evaluating educational objectives.

Board of Education. Buffalo City School Annual Budget. Buffalo, New York: Board of Education, July 1, 1967 to June 30, 1968.

Board of Education. Niagara-Wheatfield Schools Annual Budget. Niagara Falls, New York: Board of Education, July 1, 1965 to June 30, 1966.

Board of Education. Marvale Central Schools Annual Budget Estimates. Cheektowaga, New York: Board of Education, July 1, 1968 to June 30, 1969.

Each of the above budgets were traditional line-item budgets. These served as a frame of reference from which the study group could proceed in its study and planning of PPBS.

Board of Education. Memphis City Schools Annual Budget Estimates. Memphis, Tennessee: Board of Education, July 1, 1966 to June 30, 1967.

The Memphis Board of Education report contained estimates with current expense and current revenue included. The report was not pertinent to the feedback committee other than to aid in layout of yearly cost reporting section and forms.

Budget Director. Procedure Budget Manual Chapter IV. Baltimore, Maryland, 1967.

The initial section titled General Provisions reported the powers and responsibilities of various agencies and directors for budgeting. The definition of terms, numerical assignments of expenditure categories is followed by a budget calendar. The sections on Operating Programs and Capital Improvements included descriptions of the program budgets, general and detailed instructions for budget request forms and code designations for these sections.

Bureau of Budget. Staff Training Materials New York City. New York: Bureau of the Budget, February, 1968.

The information in this section was useful in terms of various descriptions regarding the statement of goals in that the program goals must be meaningful as well as quantifiable. It gave a detailed explanation of the departmental procedures for all of the budget aspects.

Business Office. Business Service Division Manual of Operation. Seattle, Washington: Shoreline School District No. 412, 1967-1968.

The Shoreline District report included the organizational structure, goals, objectives, and procedures of its departments. Information on budget planning, program budgeting and some statements on philosophy were contained in this thorough report.

Buskin, Martin. "PPBS Means Better," School Management (November, 1969).

Buskin expressed the idea that we need to get more mileage out of our educational dollar and better pupil benefits in terms of the budget. He explained programmed budgeting is not easy to implement; that it is difficult to find a school district that has implemented it. Buskin showed five districts that are working with parts of the system. No district is known to have a completely developed system.

Central Office. Accounting Manual. Memphis, Tennessee: Memphis City Schools.

Definitions of each of the coded functions preceded the listing of all budget codes.

Common Council. 1968-1969 Annual Budget. Hartford, Connecticut, 1968.

A statistical and verbal budget summary preceded the main portion of the document, which is the expenditure estimates. Verbal justification accompanied the statistical information. A five-year capital improvement program was projected, followed by sections on ordinances, line-item budget breakdown, and breakdown of revenue estimates.

Division of Instructional Services. General Guide to the Teaching of Language Arts. Buffalo, New York: Board of Education, 1966.

It was set up as a general guide in curriculum policy to the teaching of Language Arts in the Buffalo School System; used to develop program criteria.

Fels Institute of Local and State Government. Planning-Programming-Budgeting System Procedures Manual for School Districts Version I, Model 2. Pennsylvania: University of Pennsylvania, 1967.

The "Bucks County Study" provided the study group with an in-depth study of PPBS. The report defined terms, explained characteristics, elements, and procedures of PPBS. A suggested work schedule preceded the section on job outlines and step-by-step procedures for completion. The six appendices covered the areas such as secondary school course offerings, method of estimating future school enrollment, methodology of revenue forecasting in education.

Finance Department. Instructions for Preparing the Detailed Departmental Budgets for Fiscal Year 1968-1969. Garden Grove, California, 1967.

Job outlines for the budget requests in verbal form were included in this report.

Furno, Orlando F. "Program-Planning-Budget Systems: Boon or Bane," Current Practice in Education Administration, XX:2 (October, 1969).

Furno defined PPBS as planning a budget in terms of program needs. However, PPBS does not itself insure that planning will occur or that if it does such planning will be efficient and effective. PPBS is not a substitute for poor management. The Tables on pages 3 and 4 were useful as a basis for some of the forms used by the cost projection committee.

Goedhard, Neil. Proposed Budget of the City of Covina, California for the Fiscal Year July 1, 1967 - June 30, 1968. Covina, California, 1967.

This budget was divided into two basic sections. The line item budget report and the annual budget detail which gave thorough explanations of the budget statistics.

Gorham, William. Sharpening The Knife That Cuts the Public Pie: Towards Better Choice-Making Via PPBS. Lecture delivered December 20, 1967. Printed in "What's Going On In HEW?".

It was mainly a document which cited the reasoning for the Department of Health, Education, and Welfare's adopting of PPBS. This report was relevant only from the standpoint of background.

Hartford, Connecticut. Hartford Annual Budget. (1968 to 1969).

The content of the Hartford Annual Budget was to report past and present budget figures and flowscript explaining the activities which will take place. The accompanying forms provided useful formats in designing the feedback forms.

Hartley, Harry J. Educational Planning-Programming-Budgeting: A Systems Approach. Englewood Cliff, New Jersey: Prentice Hall, Inc., 1968.

The study group has used Hartley's book as a basic reference. Although Hartley has done very thorough research into the applications of PPBS, only parts of it were adapted into the study. The study group found the book useful as a general manual in systems analysis, but only to a limited extent as far as multi-year cost projection was concerned. Hartley's data forms were useful in preparing the projection techniques and forms.

Harris, Seymour E. More Resources for Education. New York: Harper & Brothers, 1960.

Harris argued that we have resources and means to solve educational problems. The unresolved question is whether or not we have the will to do it. This book provided a good background for the multi-year cost projection committee.

Hill, Lamar L. Sample Program Budgets: ElMonte Union High School District. ElMonte, California: ElMonte Union School District, 1967-1968.

In this report seven sample program budgets were presented. The outline plan stated each program's general objective, service rendered, cost of each area in past year and projected cost for the coming year. A brief statistical evaluation accompanied each budget program.

Johnson, Richard A., Kast, Fremont E., and Rosenweig, James E. The Theory and Management of Systems. New York: McGraw-Hill Book Company, Inc., 1963.

This book dealt, among other things, with some insights into the theory and problems of communicating information within a system. This material gave the feedback committee a conceptual model of feedback.

Jones, Howard R. Financing Public Elementary and Secondary Education. New York: The Center for Applied Research in Education, Inc., 1956.

After appraising this book the following notations were recorded. Two approaches to the financing of education were presented: 1. Traditional, focused upon the source and disbursement of funds in the usual ways. 2. The new approach was an effort to identify education as a social phenomenon and as a factor of production in the total economy.

Jungherr, J. A. Can a Small School District Use a Planning, Programming, Budget System. Presented at New York State Association of School Business Officials, Inc., Grossinger, New York, May 21, 1968.

Jungherr suggested a model PPBS for small school districts. He concluded that PPBS can be a definite aid to small school districts.

Kent, Arthur. "How Skokie Created a Program Budget," Nations Schools (82, November, 1968).

This article provided the program structure of the Skokie, Illinois School District. It was not too useful in our work on program structure.

Korn, Peter H., and Scher, Seymour. City of Rochester Budget. Rochester, New York: Department of Budget, 1967-1968 (p. 130) and 1968-1969 (p. 139).

Although the City of Rochester Budget was not an educational budget, the multi-year cost projection committee found it helpful in adapting the ideas of a suggested form for itemizing financial expenditures; this was modified to fit our multi-year cost projection model.

Krathwohl, David R., Bloom, Benjamin S., and Masia, Bertram B. Taxonomy of Educational Objectives. New York: David McKay Company, Inc., 1956.

The authors have devised a classification system for educational objectives in the affective domain which describe changes in interest, attitudes, and values. This book serves as an excellent resource for understanding, writing and evaluating educational objectives.

Lanigan, Charles T., and Hurd, Norman T. Guidelines for Integrated Planning, Programming, Budgeting. Albany, New York, 1967.

The report was an explanation of PPBS and how and why it is used for New York State government purposes. It outlined the general procedures to structure each of the component parts.

Lawson, F. Melvyn. Adopted Budget and Financial Information. Sacramento, California: Sacramento City Unified School District, 1967-1968.

The first section titled, "General Fund Budget" was a program budget structure with verbal description and explanation on the opposite page. Three other areas included in the document were: Non-General Fund Budgets, Statistical Information and Financial Statements.

Mager, Robert F. Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, 1962.

The purpose of this book is to assist educators in specifying and communicating educational goals. It is an extremely useful resource for writing behavioral objectives.

Manual for Project Grantees. A Report Prepared by the University of the State of New York. Albany: The State Education Department, 1969.

This manual set forth the definitions, standards and policies for the management of state aided programs and grants. The book made many references to proposed budgeting.

Morsey, Royal J. Improving English Instruction. Boston: Allyn and Bacon, Inc., 1965.

Morsey, an English teacher, wrote this book using other English teachers as resources to bring about the new ideas and changes in English instruction. It was an excellent reference book in the area of Language Arts. It provided a good background for the program committee.

New York State Education Department Center on Innovation. "Development and Field Test of an Operational Model for the Application of Planning Programming-Budgeting Systems to Local School Districts," Cheektowaga, New York. (Mimeographed.)

The study group reviewed and modified the definitions presented in this text. They needed to be more generalized to be adaptable for this and similar models of multi-year cost projection.

Office of Planning, Programming and Budgeting. Revised Program Element Listing. New York: New York City Board of Education, September, 1969.

This working document was obtained during an interview with Arnold Webb, Project Director, by a representative of the Western New York School Development Council.

Ovsiew, Leon, and Castetter, William B. Budgeting for Better Schools. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1960.

The authors reminded the committee of the need for PPBS in our educational systems. They brought research findings up to date. They also increased clarity by development of material and provided data tested by experience. They further showed how to use the budget as a tool for administrative functions.

Ramapo Central School District No. 2. Planning, Programming, Budgeting, Evaluating Systems. Spring Valley, New York: Ramapo Central School District No. 2.

A sample program structure for evaluation was outlined in this report. The program committee made use of criteria in constructing the program structure.

Report of the First National Conference on PPBS in Education. Conducted by the Research Corporation of the Association of School Business Officials. June 10, 1969.

This report of the First National Conference illustrated the basic theory behind PPBS. It provided the Program Structure of Westport, Connecticut.

Report of the NCTE Task Force on Teaching English to the Disadvantaged. Language Programs for the Disadvantaged. Champaign, Illinois, 1965.

The NCTE Task Force on Teaching English to the Disadvantaged issued this report. It contained ideas that could be used in any English program. This was an excellent source book for the program committee.

Ruidger, Charles W., and Lipp, Joseph. Westport Public Schools Continuous Progress Program in Reading. Westport, Connecticut, 1969-1970.

A five-year reading plan of implementations for the Westport Schools was discussed. Included in this brief outline were written explanations of the five-year plan and additional budget changes.

Scher, Seymour. Instruction Manual for Use in Preparation of the 1968-1969 Budget Estimates. Rochester, New York: City of Rochester, 1968.

The Rochester report gave a detailed identification of all budget categories with verbal instructions, job outlines, and copies of forms. The manual was designated for Heads of Departments, Bureaus, Boards, Commissions and Agencies.

Shoreline School District No. 412. Final Budget of Receipts and Expenditures. Seattle, Washington: Shoreline School District No. 412, 1967-1968.

A line-item budget report for the school district.

State Education Department. English Language Arts-Reading Section K-12. Albany, New York: Curriculum Development Center, 1968.

State Education Department. English Language Arts-Listening and Speaking K-12. Albany, New York: Curriculum Development Center, 1969.

State Education Department. English Language Arts-Composition K-12. Albany, New York: Curriculum Development Center, 1969.

These three books assisted teachers, both elementary and secondary, in the area of improvement of Language Arts Curriculum. These books were valuable sources for the program committee.

University of the State of New York. Syllabus in English for Secondary Schools. Albany, New York: The State Education Department Bureau of Secondary Curriculum Development, 1962.

The committee primarily used this book as a point of departure. The state recommendations for the Language Arts programs were contained in this book.

U. S. Department of Health, Education, and Welfare, Office of the Assistant Secretary. Planning-Programming-Budgeting. Washington, D. C.: U. S. Government Printing Office, 1968.

This served as an instructional guide for the preparation of the Department's program and financial plan. It included the program and financial plan classification system and reporting instructions.

U. S. Department of Health, Education, and Welfare, Office or Education. Projections of Educational Statistics to 1976-77. Washington, D. C.: U. S. Government Printing Office, 1968.

Wentz, John B. Administrative Manual for City of Riverside, California. Riverside, California, 1968.

The budget preparation procedures and responsibilities were given in outline form. The remainder of the manual contained forms and their job outlines.

Witsey, Carl E. "Program Budgeting: An easy Guide with the Confusion Removed," American School Board Journal. 156:11 (May, 1969).

Witsey advocated PPBS in public schools. He believed the system will improve cost analysis and control, evaluate programs in terms of objectives, costs, benefits; establish priorities; identify and analyze alternative ways of achieving the same goal; inform the public of the purposes, cost and expected results of school programs. This book provided a good background for the multi-year cost projection committee.

GLOSSARY

ADMINISTRATION (budget item) is the series of accounts under which are posted expenditures for the general regulation, direction, and control of the educational affairs on a system-wide basis. To be included herein, the administrative activities must influence the school district as a whole and not be confined to a single school building, or a school building subject to a narrow phase of school activities. In general it includes expenditures for school board salaries and expenses for other activities related to planning, organization, directing, coordinating, and controlling the human efforts and material resources necessary on a system-wide basis. In another sense, all expenditures related to the functions of formulating and executing educational policies for the school system as a whole are grouped under this class of accounts.

ATTENDANCE SERVICES (budget item) Financial transactions for those activities whose primary purpose is the promotion and improvement of attendance of school, through the enforcement of compulsary attendance laws or other means.

BUDGET A document that estimates all revenues and expenditures for a particular organization over a finite, stated time period.

BUILDINGS AND FACILITIES This includes the costs involved in planning and construction of new facilities as well as the improvement of ones already existing and in operation. Included here would be what is commonly termed "planning, operation and maintenance," excluding personnel who are listed separately under Plant Operational Personnel.

CAPITAL OUTLAY Included here are all expenditures which result in additions to fixed assets. This includes the expenditures by public school building authorities but excludes lease or rental payments made to these agencies. Borrowed money is included, as a large percentage of the funds expended for capital outlay in public schools was received from loans.

COMMUNITY SERVICES (budget item) Community services are defined as those services provided by the school district for the community as a whole, or for some part of the community other than public school and adult education programs.

CONTRACTED SERVICES Included here are the costs for the services rendered to a system as a whole. These are fuel, electricity, telephone, water, office machines, maintenance contracts, etc.

CURRENT EXPENDITURES Included herein are any expenditures except those for repayment of debt and capital outlay. Interest is generally excluded from current expenditures.

DEBT SERVICE (budget Item) Debt service consists of expenditures for the retirement of debt, other than current loans. It includes money paid to meet the interest on a debt, as well as to meet the payments on the principle of the debt itself. Excluded are current loans which are defined as money borrowed and paid back during the same fiscal year.

ELEMENT The level of activity within a program structure that is immediately subordinate to a sub-program.

EQUIPMENT As used in preparing budgets, this item includes cost incurred for the purchase of new articles such as audio-visual, furniture, office equipment, etc.

FIXED CHARGES (budget item) Expenditures which are not readily allocable to other expenditure accounts but which are of a generally recurrent nature.

FOOD SERVICES (budget item) Expenditures for activities which have as their purpose the preparation and serving of regular and incidental meals, lunches or snacks in connection with school activities.

FUNCTION GROUP Refers to groups of similar personnel such as teachers, teacher's aides, clerks, etc. In other words, a group all having a similar function.

HEALTH SERVICES (budget item) Physical and mental health services to pupils consist of medical, dental, and psychiatric, and nurse care, in the form of inspection, treatment, weighing, etc. Health services directed toward students as well as employees are included here.

INSTRUCTION (budget item) As a budget category this refers to financial transactions related to activities concerned directly with or aiding in the teaching of students or improving the quality of teaching. This involves the payment of salaries to teachers, principals, supervisors of instruction, guidance, and psychological personnel as well as textbooks, library books and other materials and supplies used in the instructional process.

INSTRUCTIONAL OPERATION RE PERSONNEL This refers to the salaries of professional personnel such as: building principal, supervisor, classroom teacher, guidance, school health nurse-teacher, school psychologist, school social worker, librarian, dental hygienist, teacher aides, office clerks, and secretaries (building level), any others directly concerned with the direct involvement of students or in aiding those building administrators who are responsible for building management.

INTEREST Includes all funds expended for the use of monies.

MAINTENANCE OF PLANT (budget item) Maintenance is required to keep the grounds, buildings and equipment in their original condition, either through repairs or by replacements. A departure over previous accounting practices is recommended through the use of the piece for piece replacement system which ignores the relative value of the replaced item of equipment and its replacement. (Replacement of something is posted to maintenance, regardless of the relative value of the item replaced.)

MULTI-YEAR COST PROJECTION A multi-year budget forecast based upon the program structure, which projects the future (usually five years) output and cost implications of current decisions. (taken from the WNY PPBS Glossary, p.3)

OPERATION OF PLANT (budget item) Activities necessary to keep the school plant in operating condition, which would include such things as cleaning, disinfecting, heating, lighting, moving of furniture, handling of stores, caring for grounds, and other such housekeeping activities which are repeated somewhat regularly on a daily, weekly, monthly, or seasonal basis.

PAYMENT BETWEEN SCHOOL DISTRICTS (budget item) Posted within this series of accounts are monies paid to other school districts or administrative units. These expenditures are made for several reasons among which are: (1) the expenditures cut across several accounts and are not readily chargeable to any one classification; therefore, one payment is made in lieu of many different expense items; (2) membership or attendance data needed to relate the expenditures to some classification are lacking in the paying district; (3) from the standpoint of the nation or the state, such expenditures are actually a transfer of funds between school districts, and in order to avoid duplication and consolidate data for the state and the nation, it is necessary that the paying school district be able to identify such expenditures.

PERSONNEL See Administrative, Operational, Instructional, Plant Operational.

PLANT OPERATIONAL PERSONNEL Those non-professional, generally civil service employees, responsible for maintaining the physical facilities in proper operation.

PPBS (Planning Programming Budgeting System) A conceptual decision-making approach developed by the Rand Corporation. This approach emphasizes grouping inter-related activities, examination of accomplishments, and long-range planning.

PROGRAM A group of interdependent, services or activities, possessing or contributing to a common objective or set of allied objectives.

PROGRAM STRUCTURE An organization of programs, sub-programs, and elements.

PUPIL TRANSPORTATION (budget item) The primary purposes of such services are to convey pupils to and from school activities between home and school, or on trips for curricular or co-curricular activities.

SALARIES Wages paid to all school employees, divided into three areas: Administrative Operations, Instructional Operations, Plant Operational.

SERVICE UNIT EXPENSES Costs incurred for providing the following employee benefits and district insurance: Teacher Retirement, Social Security, health insurance, liability, compensation, other insurance, unclassified expenses (e.g. refunds, assessments of taxes, bank service charges, inventory of equipment charges, etc.)

STUDENT BODY ACTIVITIES (budget item) The direct and personal adult services rendered to public schools for such activities as interscholastic athletics, entertainment, publications, clubs, bands, orchestra, and other affairs managed and operated by the student body, which are not a part of the regular instruction program.

SUB-PROGRAM The level of activity within a program structure, that is subordinate to a program, and above an element.

SUPPLIES Those items needed and generally consumed in the total instructional operations program, generally on a year to year basis.

SYSTEM The complete set of inter-relationships between a group of objects, all falling within a common boundary of purpose.

TOTAL EXPENDITURES Includes all funds expended for Capital Outlay, Current Expenditures, or Interest.

APPENDICES

The appendices which follow represent a compilation of the program structures examined by the study group.

Appendix A----------City of Baltimore School District,
Baltimore, Maryland.

Appendix B----------Bucks County (University of Pennsylvania)
Bucks County, Pennsylvania.

Appendix C----------City of Hartford School District,
Hartford, Connecticut.

Appendix D----------New York City School System,
New York, New York.

Appendix E----------Pearl River School District,
Pearl River, New York.

Appendix F----------Sacramento City School District,
Sacramento, California.

Appendix G----------Skokie School District,
Skokie, Illinois.

Appendix H----------Spring Valley School District,
Spring Valley, New York.

Appendix I----------Westport School District,
Westport, Connecticut.

APPENDIX A

CITY OF BALTIMORE SCHOOL DISTRICT, BALTIMORE, MARYLAND

The City of Baltimore designates thirteen major programs:

1. Administrative Direction and Control.
2. Instruction.
3. Pupil Personnel.
4. Pupil Transportation.
5. Operation of Plant.
6. Maintenance of Plant.
7. Food Services.
8. Student Body Activities.
9. School-Community Relations.
10. Private Grants.
11. Federal and State Grants.
12. Debt Service.
13. School Improvement Service.

APPENDIX B

BUCKS COUNTY SCHOOL DISTRICT, BUCKS COUNTY, PENNSYLVANIA

The Program Structure designed for Bucks County by the University of Pennsylvania consists of four program categories and twenty-three programs as listed below:

I. Coordinative Program Area

A. Policy and Executive Program

B. Comprehensive Planning Program

1. Long-Range Development Planning Sub-Program

2. Planning, Programming, Budgeting Sub-Program

C. Information and Liaison Program

D. Community Services Program

E. Coordinative Support Services Program

1. Program-Development and Evaluation Sub-Program

2. Professional Education Sub-Program

3. Secretarial and Clerical Service Sub-Program

II. Instructional Program Area

A. Early Childhood Instruction Program

B. Elementary Instruction Program

C. Secondary Instruction Program

D. Vocational-Technical Instruction Program

E. Special Instruction Program

F. Continuing Instruction Program

G. Instructional Support Services Program

1. Instructional Media Sub-Program

2. Pupil Assessment-Guidance Sub-Program

3. Attendance Services Sub-Program

4. Program Development and Evaluation Sub-Program

5. Professional Education Sub-Program

6. Secretarial and Clerical Services Sub-Program

III. Health Program Area

A. Nursing Program

B. Medical Program

C. Dental Program

D. Psychological Program

E. Health Support Services Program

1. Program Development and Evaluation Sub-Program

2. Professional Education Sub-Program

3. Secretarial and Clerical Services Sub-Program

IV. Business Program Area

A. General Services Program

1. Finance Sub-Program

2. Personnel Sub-Program

3. Purchasing Sub-Program

4. Communications Sub-Program

5. Data Processing Sub-Program

B. Pupil Transportation Program

C. Food Services Program

D. Facilities Program

1. Operation and Maintenance of Plant Sub-Program

2. Capital Improvement Sub-Program

3. Debt Services Sub-Program

E. Fixed Charges Program

F. Business Support Services Program

1. Program Development and Evaluation Sub-Program

2. Professional Education Sub-Program

3. Secretarial and Clerical Services Sub-Program

APPENDIX C

HARTFORD SCHOOL DISTRICT, HARTFORD, CONNECTICUT

The budget document of the City of Hartford Connecticut does not list succinct program categories but merely presents the total appropriation for the Department of Education. In a separate classification, the following breakdown was found listed under "related revenues:"

1. General Education
2. Vocational Education
3. School Buildings
4. Physically Handicapped
5. Mentally Handicapped
6. Transportation of Mentally Retarded
7. Socially and Emotionally Maladjusted
8. Evening School
9. Driver Education
10. School Library Books
11. Tuition, Public Schools
12. Concessions
13. Rental of City Property
14. Miscellaneous Sales
15. Athletic Association Receipts
16. Student Publications

APPENDIX D

NEW YORK CITY SCHOOL SYSTEM, NEW YORK, NEW YORK

The following is the Program Structure delineated by the New York City School System:

I. Primary Education

A. Regular Day Elementary Schools

B. Special Service Elementary Schools

C. More Effective Schools

D. Summer Elementary Schools

E. Primary Education Administration

II. Intermediate Education

A. Regular Day Junior High Schools

B. Special Service Day Junior High Schools

C. Intermediate Schools

III. Career Preparatory Education

A. Academic Day High Schools

B. Special Day High Schools

C. Evening Academic High Schools

D. Summer Day Academic High Schools

E. Summer Evening Academic High Schools

F. Day Vocational and Vocational Technical High Schools

G. Evening Trade Schools

H. Summer Day Vocational High Schools

I. Special Programs

IV. Special Education

A. Schools for Socially Maladjusted and Emotionally Disturbed Children. "600" Schools.

B. Summer Schools for Socially Maladjusted Children and Emotionally Disturbed Children.

C. Schools for Physically Handicapped Children. "400" Schools.

D. Occupational Training Centers for Children with Retarded Mental Development

E. Schools for the Deaf

F. Administration of Special Education

V. Research Development and Evaluation

A. Educational Program Research

B. City-Wide Standardized Testing Program

C. Curriculum Research and Development

D. Administrative and Financial Research

E. School Plant Research

VI. Community Activities

A. Community Education

B. Adult Education

C. Management of Community Activities

VII. General Support

A. Administrative Support

B. Personnel and Training Support

C. Instructional Support

D. Pupil Support

E. School Plant Support

F. Non-Public School Support

G. Community Support

H. Department-Wide Support

VIII. Headquarters Administration

A. Central Headquarters

B. District Headquarters

APPENDIX E

PEARL RIVER SCHOOL DISTRICT, PEARL RIVER, NEW YORK

Programs of the Pearl River School District are identified, coded, and placed into the following program categories:

I. Instructional Programs

II. Instructional Support Programs

III. Community Service Programs

The following is the program structure of Pearl River:

I. Instructional Programs

A. Basic Education

1. English, Language Arts, and Reading, K-12
2. Science (including Health), K-12
3. Mathematics, K-12
4. Social Studies, K-12
5. Physical Education, Intramural and Interscholastic Athletics, K-12
6. Business, 9-12
7. Foreign Language, 7-12
8. Unified Arts, (Industrial Arts, Homemaking, Driver Education and Mechanical Drawing), 6-12
9. Art, K-12
10. Music, K-12

B. Special Education

1. Educable
2. Emotionally Disturbed
3. Learning Disability
4. Physically Handicapped
5. Trainable

C. Vocational Education

1. Air Conditioning and Refrigeration

2. Auto Body and Fender

3. Automotive Repair

4. Building Maintenance

5. Construction Trades

6. Cosmetology

7. Data Processing

8. Distributive Education

9. Drafting and Design

10. Electricity

11. Electronics

12. Food Trades

13. Grounds Maintenance

14. Instrumentation

15. Landscaping

16. Machine Shop

17. Practical Nursing

18. Public Communications (Printing)

19. Service Station

20. Small Appliances

21. Welding

D. Continuing Education

1. Adult Education

II. Instructional Support Programs

A. Learning Resources

1. Libraries, K-12

B. Pupil Personnel Services

1. Guidance and Psychological Services, K-12

2. Health Services, K-12

C. Facilities

1. Acquisition and Improvement of Facilities

2. Operation and Maintenance of Facilities

a. Custodial Cleaning

b. Building Maintenance

c. Ground Maintenance

d. General Services

D. District Management

1. School Management

2. Central Office Management

a. Board of Education

b. Superintendent

c. Instruction

d. Personnel

e. Finance

f. Community Relations

g. Planning and Research

E. Transportation

1. Home to School and BOCES

F. Food Service

1. Regular Students' Lunches and Milk Program

III. Community Service Programs

A. Recreational Agencies

B. Community Groups

APPENDIX F

SACRAMENTO CITY SCHOOL DISTRICT, SACRAMENTO, CALIFORNIA

Sacramento organizes its budget data into three major categories:

I. Administrative Services

II. Instructional Programs and Services

III. Supporting Services

The following is a complete listing of the individual services under each of the above headings:

I. Administrative Services

- A. Board of Education
- B. Office of the Superintendent
- C. Personnel Services
- D. Planning and Research
- E. Business Services

II. Instructional Programs and Services

- A. Administration Instructional Services
- B. Curriculum Development
- C. Special Services
- D. Elementary, Junior, and Senior High Schools
- E. Schools for Adults
- F. Continuation High School
- G. Summer School Program
- H. Staff Training and Summer Demonstration School
- I. Special Projects Department

III. Supporting Services

- A. Transportation
- B. Maintenance and Operations

C. Fixed Charges

D. Food Services

E. Community Services

F. General Capital Improvements

APPENDIX G

SKOKIE SCHOOL DISTRICT, SKOKIE, ILLINOIS

The Skokie School District restated its legal budget categories into what it calls "Program Classifications". The following is a listing of these Program Classifications.

1. Spelling, Handwriting, Language Arts
2. Reading
3. Phonics
4. Mathematics
5. Science
6. Social Studies
7. Art
8. General Music
9. Instrumental Music
10. Gifted Music Program
11. Foreign Language Program
12. Typing
13. Home Economics
14. Industrial Arts
15. Physical Education
16. Sex Education
17. Health Education
18. Health Services (Nurse, etc.)
19. Custodial Care (Playground, Study Hall Aides, etc.)
20. Kindergarten
21. Maladjusted
22. Trainable Mentally Handicapped
23. Educable Mentally Handicapped

24. Learning Disorders
25. Speech Therapy
26. Title I, Remedial
27. Psychologist Services
28. Deaf, Blind, and Physically Handicapped
29. Social Workers Services
30. Summer School
31. Library Program
32. General Administration
33. Personnel Services & Administration
34. Accounting and Finance, Administration
35. Public Relations, Administration
36. PTA
37. Research
38. School Lunch Program
39. Transportation
40. Extra Curricular Activities, K-6
41. Niles Township Film Library
42. Plant Operations and Maintenance
43. Debt Service (Tax Warrants, Repayment of Bonds, etc.)
44. Land Acquisition and Use
45. General Equipment
46. Building Construction and Improvement
47. Extra Curricular Junior High School Programs
48. Contingency

APPENDIX H

SPRING VALLEY SCHOOL DISTRICT, SPRING VALLEY, NEW YORK

Spring Valley has taken all the school district's activities and placed them into a design with three major headings:

I. Curricular Programs

II. Curricular Supportive Programs

III. Special Services to the Community

These broad categories are subdivided into individual program of activities as follows:

I. Curricular Programs

A. Instructional Programs

1. Basic Elementary

2. Basic Secondary

3. Special Education

4. Vocational Education

5. Compensatory Education

6. Continuing Education

B. Instructional Support Programs

1. Learning Resources

2. Pupil Personnel Services

C. Student Activities

1. Elementary

2. Secondary

II. Curricular Supportive Programs

A. Facilities

1. Acquisition and Improvement of Property

2. Operation and Maintenance of Plant

B. School Related Services

1. Pupil Transportation

2. Food Services

C. Policy and Direction

1. Board of Education

2. District Coordination and Administration

3. School Level Program Coordination and Administration

III. Special Services to the Community

A. Recreation Agencies

B. Youth Activities

C. Senior Citizens

APPENDIX I

WESTPORT SCHOOL DISTRICT, WESTPORT, CONNECTICUT

The following are the program categories described by Westport:

I. Instructional General

Those programs of activity, learning activities, which are in support of the learning of the broad group of youngsters who are not considered exceptional.

II. Instructional Exceptional

All those instructional activities that are designed for the children who are either exceptional by reason of being gifted or exceptional by reason of being handicapped.

III. Instructional Support

All those activities which are in direct support of either instructional general or instructional exceptional.

IV. Non-Instructional

Such items that are not in direct support as general administration, the operation of the transportation system, the maintenance of plant, etc.

V. Community Service

Those activities which the school system undertakes which are not defined as being within the legal, regular responsibility of the school system.